RAILWAY MODELLER

FREE

INSIDE! *Our latest locos into HO!*

TOWER 55

The EVOLUTION of Authenticity

HO Scale as it was meant to be...
superior details, extraordinary accuracy

- Authentic, accurate reproduction in HO scale
- Die-Cast injection-molded, high grade plastic body
- Brass separates, castings, injection-mold levers, handrails and hand grabs
- Explorer Series sets equipped with Digitrax DCC53 technology and Digitrax SoundFX
  (Sound software required at EXTRA cost—available under the Pioneer Series)

All units are fully detailed including factory paint, pad printed lettering, lights and dark lights. Units in the Tower 55 Explorer Series come equipped with the exclusive DCC53 technology and sound.

See your Tower 55 Dealer or visit our Web site at **www.Tower55productivity.com**

a new era of imagination

Mountain Model Imports

The Die-Cast Division of Precision Scale Company, Inc.

D&RGW K-27 Inboard in On3 and On30

Also: D&RGW K-27 Inboard and Outboard in HOn3

MSRP $469.00 On3/On30
MSRP $369.00 HOn3

D&RGW C-19 2-8-0 in On3 and On30

MSRP $539.00

- All MMI Models Are Die-Cast & Brass Construction...No Plastic!
- Several Versions Available
- DCC Ready, including QSI® Sound Cam
- See Your PSC Dealer Or Visit Our Website For Details

"MMI is Affordable, Accurate, Die-Cast Models"

MMI's On3/On30 K-28 Available At Your PSC Dealer Now

Future MMI releases in On3/On30: D&RGRR 0-6-6T, D&RGW K-36, K-37, and C-21

P.O. Box 278, Stevensville, MT 59870 ● (406) 777-5271 ● www.precisionscale.com

The FINER things in life...

PECO STREAMLINE

Peco Streamline Flex Track Systems combine strength & reliability with a realistic rail height.

00 Gauge Code 75 - above 4mm rail

SL-E300	Double Curve - 3rd rail
SL-E301	Double Curve - 3rd rail
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SL-E1000	Double Curve - 3rd rail

0 Gauge Code 75 - above 4mm rail

SL-E300	Double Curve - 3rd rail
SL-E301	Double Curve - 3rd rail
SL-E302	Double Curve - 3rd rail
SL-E303	Double Curve - 3rd rail
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SL-E311	Double Curve - 3rd rail
SL-E312	Double Curve - 3rd rail
SL-E313	Double Curve - 3rd rail
SL-E314	Double Curve - 3rd rail
SL-E315	Double Curve - 3rd rail
SL-E316	Double Curve - 3rd rail
SL-E317	Double Curve - 3rd rail
SL-E318	Double

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We hooked together four locos to simulate a heavy load. Then, at mid-range voltage and moderate speed, we went from a flat roadbed up a 3 percent grade. With a conventional pack, the decoder has extra power would have caused a voltage drop, slowing the loco. Not the prototypical slowing from climbing an incline, but the immediate slowdown because there's an increased load on the pack and a drop in voltage.

GRADE

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Realism is great, but power is critical. We connected 24 locos to a Tech 240 and watched as it took the 24 locos simultaneously around the layout. After a couple of minutes, one throttled down and brought the locos to a stop. While you might never need this kind of reserve power, isn't it comforting to know it's there when you're adding lashups or accessories?

24 locos

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N-Scale Rails

Texas, Oklahoma Events Spotlight N Scale

by Tom Worsh

Model railroad events in Houston and Oklahoma City in late 2005 and early 2006 spotlighted the hobby for thousands of visitors of the general public, and at the same time offered hundreds of modelers and other enthusiasts inspiration and ideas for their modeling efforts.

Many layout tours are an annual hit

For many years, members of Houston's San Jacinto Model Railroad Club have organized the "full steam forward capital tour" in conjunction with National Model Railroad Month, the NMRA annual event in support of the hobby, when model railroaders open their club and home layouts to the general public. In recent years, both the number of layouts on the tour and the number of weekends the tour covers have expanded.

For the 2005 effort, layouts were open every weekend from mid-October to the first weekend in December, thus extending National Model Railroad Month in Houston and surrounding towns to eight weekends!

This year's tour included 60 home and club layouts, with many roughly within the range from Z to very large-scale live steam. Layouts built for the popular Lionel/Marx trains were featured on the tour.

N scale was well represented on the tour with ten layouts of varying themes and levels of completeness. Modular efforts included the Ft. Bend Model Railroad Club's sparkling detailed representation of a portion of Southern

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—Garry Lenore, MMR

Observation Car

Conducted by Terry Bacon Jr., editor
editor@bacontrain.mainst.org

What a Ride!

It's with a bit of sadness, but also with a sense of pride, that I write this column. As you have read in the previously column on page 2, I will be stepping down as editor of Model Rail and the BMRA Bulletin this fall. It has been nearly 12 years since I first put on the hat as your editor.

And what a great ride it has been.

When I became editor in 1998, we had less than one dozen on hand from which to choose. It took a couple of years, but that problem was solved. Here we have a graphic redesign of the magazine and a change in printing to bring you a more visually interesting magazine. We were able to grow the typical issue from just 32 pages to more than 64 by 1999.

Under the stewardship of then-publisher Dave Frary, Scale Rail became the star of a renewed Bulletin, while also becoming a magazine that members looked forward to receiving each month. And, alas, budget constraints led to the magazine being scaled back to just 52 pages upon in late 2008. That not withstanding, our members received up to the state and filled organized visits to providing rewarding coverage for the magazine on topics such as narrow gauge, Arcade, N.C., how-to's and product reviews.

After several changes in executive directors, a new publisher came on board last year. It has been a pleasure to work with Larry Hartwig in implementing many changes that we had sought for the subscription. Extensive printing there is a renewed focus on Middle Arkansas. We have seen this reflected in the magazine since the August issue, and it is something that you can look forward to seeing more of in the future.

Many readers will asked what we would again consider the cost of the magazine. Well, I am pleased to tell you that a redesign is in the works. While the new design originated by the production staff at Kalmbach Communications and set to take effect this spring, it has been put on hold. Why? Because the road staff has also discussed a redesign. To avoid having two design changes in rapid succession, the redesign will be left to the new editorial staff.

Speaking of which, I would like to welcome Andrew Knorr (at right) as the new editor along with the rest of the editorial and production team at Strap Rail Productions. We are already making plans to provide a smooth transition, and will be meeting in March to discuss details. I know the latest issue will continue to make great strides improving the magazine.

Of particular notice now on the front is the placement from my current one to the center. While this will make a change in the way the cover is printed (there is an weight to the same weight as the rest of the publication), it will allow the maximum editorial editing to previous cover. With the additional pages, Scale Rail will be able to carry more information on each issue, improving thread activity of importance and have a the out and-most news and information can be located.

As this is editor (My will not be my final column, and I look forward to serving you throughout the remainder of the spring and summer. As always if you have some thing on layout, give me a call. And, if it's something bad will be my morning train. I'll pass it along.

Featuring Material for Scale Rail and the BMRA Bulletin

Text

The Editor requests articles to be submitted to the editor via e-mail. Please send articles in the body of the e-mail and not as an attachment. Please do not use fancy formatting.

- Articles may be submitted on either Mac or Windows formatted disks. Word and text files are preferred.
- Articles may be submitted by e-mail to the editor. If possible, send one article per e-mail message.

Photos

- Photos may be supplied in any format acceptable, color slides are generally not recommended. Color prints are preferred. Do not write on the back of photos with pen or pencil. Instead, use a soft lead pencil and write lightly.
- Digital photos should be sent with a resolution of 300 dpi or greater.
- Identify each photo by date and write a brief description of what is shown. Include your name, address and phone number.
- Send negatives or a sheet of paper with photographs numbered to correspond with the photos.

Drawings and Artwork

- Drawings and other art should be submitted in electronic format using black ink.
- Computer drawings can be supplied on disk with a hard copy proof. Most formats are acceptable, but Adobe Illustrator files are preferred. Contact the editor if you need to submit other drawings.

Mailing

- Be sure your name, address and phone number are on each item you submit.
- Use a manila envelope that is large and sturdy enough to hold all material you are sending. Use a mailing label for both and magazine.
- Use cardboard to protect photos from damage in the mail. Corrugated cardboard is best.
- Mark the package "Photos enclosed – Do Not Bend" in the lower left corner.
- Use first class mail for domestic shipments. Send international shipments as Priority Mail. Over 100 Approximately one week.

Miscellaneous

- We try to accommodate all material received. However, we cannot give a firm publication date in advance. Generally, time-sensitive material will be given priority.
- Material submitted will be returned if requested. Please include a self-addressed, stamped envelope if you want your material returned.
- Payment is the first we can offer is free issues and subscription copies.
- Contact the Editor before you begin work on a major project.

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■ SOUTHERN STYLE HUDSON. Williams Electric Trains is offering its commemorative no. 5000 4-6-4 small Hudson in a variety of road names, including Southern Railway (shown above). The O gauge model features die-cast metal construction, a digital whistle and bell, an operating headlight, and a tender smoke unit. Also included are a bottle of Williams smoke fluid, a replacement headlight, and an extra pair of traction tires. For more info, see p. 4. Price for the Southern version is $450. Order direct from Williams Electric Trains, 8651-T Columbia Hill Parkway, Columbia, MD 21045; or call 410-997-7700.

■ HORNBY GIFT. You can build your own O gauge World War II troop train one car at a time. Hornby offers troop sleepers, kitchen cars, and hospital cars. Also available are personnel conversions for express service (shown above) and track materials. Prefinished troop sleepers, kitchen cars, and hospital cars cost $49.95 each; the prefinished maintenance-of-way cars cost $79.95 each; and the express cars cost $84.95 each. For your Hornby catalog or order direct from Hornby Hobby, Box 101, 910 Pitt's Township Dr., Northumberland, PA 17857; call 570-473-3434; or order at www.hornbyhobby.com.

Hobby news

In the latest issue of [illegible] **1:220 the-of-the 2002 locos** [illegible] to run here for the time that has not been [illegible] [illegible] [illegible]

A GRAND TOWER Weaver Models is offering an O gauge brass switch tower. The model features sintered wood grain detail and complete interior decoration except for glass inserts and a pot-bellied stove. Three paint schemes are available: cream with green trim (shown), light gray with dark gray trim, and yellow with white brick trim. The models cost $150.95 each plus shipping. Get your Weaver retailer to order yours from Weaver Models, Box 214, 3151 Main Township Dr., Northumberland, PA 17857; call 570-473-9558; or order at weavermodels.com.

In Models, Real Rail Forward, Prototype notes, locations, and timelines tracks real subject and a 1937-1964 Wilson steel boxcar available unlettered and in Baltimore & Ohio, Boston & Maine, & Maine, & Erie Chappell, and Northwest Car Line.

News in S gauge

American Models relies on **HO & S**

Rapido an Silver Ann coal hopper. Bob Buck based with impressive models made and the brothers and the 1st & York Central with excellent models make. Prices start at $299.95 each, also offered is an Erie **wagon top** in five new road names: 12-A Series 1st Brother, 1st Hatch Cover, and 1st Series 1st Brother. 1st Hatch Cover, and 1st Series 1st Brother. 1st Hatch Cover, and 1st Series 1st Brother.

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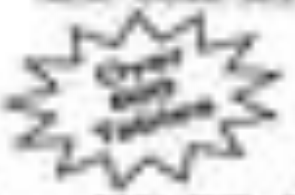
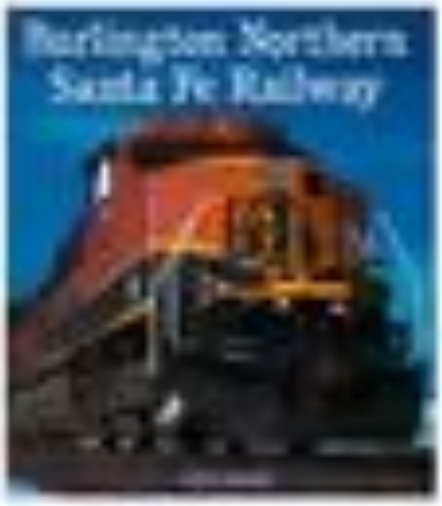


▲ HEADS TO HAUL. (LIVE MIKE) (HOLLI) The vintage R-1 subway car this and fellow were built for New York's Independent system has arrived. The 40'6" Premier line from features a hour sun set with a proximal unit with new can seat dividers as well as finished/sound 1-4 pad two-tint wainplate. Thin O gauge cars also boast interior illumination and decoration. The set costs [illegible] for your table retailer or go to mth-railking.com.

► REFRIGERATOR CAR 101. Among the most popular items in O gauge today are the colorful sound-side billboard refrigerator cars hosted by Atlas O. To commemorate the 50th anniversary of this product series, Atlas O has released the Atlas O, our 20' Wood Reefer Collector's Guide. The 72-page softcover book has more than 100 color photos to help tell the story of the development of the line and highlight the cars produced between 2000 and 2004. The guide will be included with each 50 foot refrigerator car here, or you can order it for $7.95 at atlasrr.com.



▲ MAGNIFICENT RAILROADS. BURLINGTON NORTHERN SANTA FE. Railroads by Brian Solomon. The 288 page hardcover book covers the history of the two main components of the Burlington Northern as well as the heroics and the impact of their merger. The volume features 300 color and 50 black and white photos and even has your hobby retailer or order direct from MBI Publishing at 800-458-0454 or mbipublishing.com.

▲ CHILL OUT ON THE HORIZON. The Milwaukee Coast Railroad Club is offering this O gauge Milwaukee Road operating ice car as the 1995 in its special series commemorating the Midwestern carrier. The limited edition car is made by Lionel and costs $69.95 plus $7.5 shipping for one or two cars. The order deadline is March 1, 2006, for September 1, 2006, delivery. Make your check or money order payable to: MCRR Club, c/o Steve Hulbut, 2818 N. Sherman Ave., Milwaukee, WI 53212 or go to mcrr.com.

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▲ STREET LIFE. Neat Figures front-stitching homeowner includes 1600 tie-nights like this, 1608 plumbers customer, 1607 crying child, and 1403 graffiti artist. The big artist sold 24,000 each (pictured) at $3.75 (unassembled). Set your holiday whether or order direct from Arriving Accessories, 1616 Broadway Ln., Newark, OH 43702; call 800-514-2455, or check out the online line at arrivingusa.com.

▲ MEAT ON THE TABLE. MTH has released the no. 20-94982 Railroad Packing Co. 40-foot steel-side refrigerator car. The O gauge car features scale dimensions, brilliant graphics, and the new overall trucks and couplers. It costs $44.95. See your MTH retailer or go to mth-railking.com.

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The MQ boxcar at top shows the reporting marks (the car owner is initials and car number) in the common location above the left-hand truck. To make room for a centered "billboard" name, the railroad moved the markings to the right side, as shown on the lower car.

I recently bought a couple of MQ boxcars and now feel the reporting marks opposite the usual position is like a lettering error, or can you tell me what's going on?

Allen Cullison
Aurora, Illinois, MEA

The Association of American Railroads (AAR) and its predecessor organizations have specified standard locations for reporting marks (the owner's assigned initials and the car number) for some of the past century. Moreover, the exact location on the car side is left to the car owner's discretion, based on the freight car's construction and other lettering.

Recommended lettering diagrams accompany these specifications, showing the reporting marks on the centered-to-one-side-of-the-left-hand-truck "Bible car" concept. Before the AAR's recommendations (although the Code of Federal Regulations, dated Nov. 15, 1949, requires reporting marks, car number, and built date [but not the centerline] on either side) the reporting marks were usually placed on the left side of the car, near the left-hand truck, with the car number on the right side. Some railroads also used the centered arrangement for smaller (box) panels/ends cars so the car's reporting marks wouldn't be covered by car spare car doors — Ron Mulligan, senior editor

Before radios, electric lanterns, gas lanterns, even before I became a model railroader, engineers made signals from crews using a series of simple means. Can you compile a list of simple signals?

Ron Arnold, Scranton, Pa.

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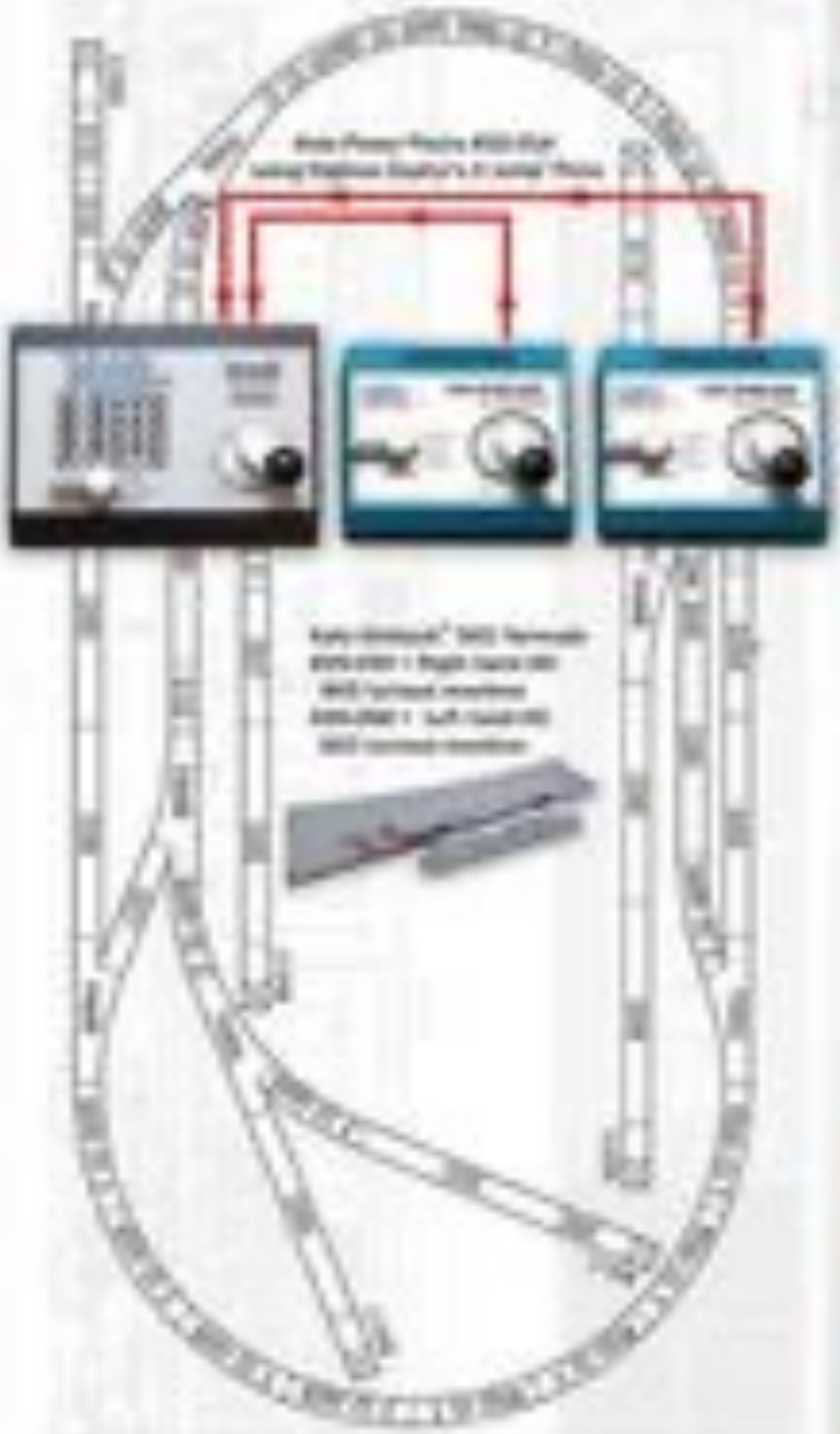

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Information Desk

Multiple short. [illegible]

One long. [illegible]

Two longs. [illegible]

Three short. [illegible]

Four short. [illegible]

Two longs, a short, and a long. [illegible]

Short long. [illegible]

Long. Three shorts. [illegible]

Three (short, long. [illegible]

Four longs. [illegible]

Five longs. [illegible]

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Information Desk

Register users from railroad to railroad. If you have wiring questions and want to know more about installing a power relay, one best route to consult a rule book issued by most railroads. — Carl Arendzen, assistant editor

We've received some mail from people who've seen our article about lighted cabooses in the January Information Desk discussion of dark lights.

Ken Peters of Greenville, Ky., writes, "My fascination and excitement with lighted cabooses began when I was a small child when I would watch the trains on the Louisville & Nashville Railroad. Electric locomotives like the one that pulled my train always had a small diesel engine on the rear to provide heat for the passenger cars. Behind the diesel engine was a caboose with a red marker light on the rear platform. I remember thinking that the caboose was the most beautiful thing I had ever seen. I've been hooked on lighted cabooses ever since. I've been a model railroader for 40 years and have only recently begun to add lighting to my cabooses. Most of the cabooses I've lighted have been scratchbuilt, but I've also lighted a few kits. I've been using LEDs for the last couple of years, and I've had very good results with them. I've also been using a small circuit board that I've designed to control the lights. The circuit board has a bridge rectifier, a voltage regulator, and a flasher circuit. I've been using the flasher circuit to simulate a ditch light on the front of the locomotive. I've been very pleased with the results. I've been using the circuit board in my cabooses for about a year now, and I've had no problems with it. I've been using the circuit board in my cabooses for about a year now, and I've had no problems with it."

Thanks for the comments. The concept of lighted wooden trains has caught my attention. Perhaps that's one more hobby-related project you have scratchbuilt. Does anyone else have a lighted caboose?

Lou Phillips of Bay Shore, N.Y., writes, "I would like to add that electric lights are an ancient invention. Although Europe, unlike continental, especially in Europe, almost from the inception of rail commerce, displayed their lights on the front of the second engine in front. These were electric lights, the cranks, and many traffic and performance of an approaching train."

For any more letters on when the first electric lights appeared, feel free to contact us by writing the Information Desk, Model Railroader magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail mrmag@kalmbach.com. We might run your answer in the question we receive.

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Chalk one up for instant fascia

Pop in fascia for a consistent curve section. Reader Dave Boyd cut the chalkboard at appropriate angles to follow the layout's windscape.

Finishing a section of good-looking model railroad fascia material was the goal during a recent stop at the local home improvement store. I'm building a sectional layout that follows some of the construction techniques Model Railroad used to build the Caldwell Industrial District. (See "A dockside industrial railroad" in the March/April 2004 issue. — Ed.)

Since the fascia forms part of the layout's nonscenic framing, I wanted to add a curve to the plain. I was searching for a material, preferably finished material that was smooth, inexpensive and easy to cut.

The material I found is a compound hardboard made by Georgia-Pacific, and it's sold in 4×8-foot panels. It's almost perfect. Hardboard panels used in curves as 1/4" and 1/8" thicknesses.

I measure the fascia pieces from the bottom of my benchwork framing to about 1" above the layout's upper surface. This extra inch provides a nice lower lip that helps protect the background scenery from photogr[illegible]. Then I cut the pieces [illegible] with the table saw. I set the blade to bevel through the surface by [illegible] 1/4" to avoid chipping the cut edges.

Sometimes in a matter of framing the piece together and aligning the edges before I attach them with a brad nail gun. Then [illegible] I can put the panels [illegible] and screw [illegible] them. I trim any panels that need it so as not to [illegible] the table saw blade or [illegible] — Kevin Boyd, Ontario, N.Y.

I have some old American Flyer toy trains and some plastic kit trains I've built. I'd like to [illegible] with my grandkid [illegible] a railroading. Can you suggest how I might run [illegible] my various toys and railroading items with as little [illegible] as possible, without damaging the original trains?

Jon Britz, Bremen, Ohio, 44

This is an interesting problem that [illegible] readers face every [illegible] to the hobby has [illegible]. First, you want to decide if you want to preserve the original finish and collector [illegible] by leaving the [illegible] paint and not [illegible] to the [illegible] or cleaning products.

If it's the [illegible] that's [illegible] you, start by [illegible] with [illegible] liquid soap and water. If that doesn't work, try a stubborn [illegible] household cleaner. Be aware that [illegible] models as strong [illegible] have chosen to [illegible] a paint [illegible] to [illegible] paint, so try [illegible] paints. Avoid hard [illegible] or [illegible]. You can [illegible] a cotton [illegible] to [illegible] [illegible] paint.

If [illegible] passages don't work, [illegible] Walker "Occasional Used Car" [illegible] or [illegible] supply [illegible] or [illegible] a

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...ice to entertain, even on a certain ball or walk. "Enchanted" is a free, colorful, virtual tournament celebration that has the same properties as material sports without the winning rules. No combat, though, is now online and interior some points.

If you still haven't had your fun in it using Microsoft's Mario Kart, Wii Sports Spin, a figure, or indoors physical sports.

As gift cards if it's on the shopper or the needs or constraints. It is not before trying it, so the retailer only, not as cost. For employees living here is to be gained and give them points wherever now or with. Small bucks! — Steve Thompson, editor

Tax shelter. Are you worried we mention engineer or finishing a basement-railroad room by the December 2007 Workshop column, but it's by a covered modern on by control of their construct projects on trains. Many municipalities rightly consider a basement an underutilized space. However, certain physicians can change a permanent, habitable space into suitable "living space."

Local tax codes vary, but some of the suggested additions are internal methods for metal indoor shelves, including installing insulated ceilings, wall tile or carpeted floors, and painting an artwork. Any one of these could be sufficient to change the tax status.

For that reason I used a high quality inspection, but exactly as commercial floor coating paint and a window wall treatment. No ceilings and supporting columns will be allowed. Add some wood shapes to introduce a more ideal and pleasant area. Work areas with accomplish more of the dust control and dampness control you suggested — giving a railroad full and reasonable finished appearance — while still retaining the room's basement status.

Now we want management to come across. But no municipalities explore with high property taxes by providing. We'll let local officials could financially take thousands of dollars annually in our local property taxes. Spinning these valuable assets at a cost not to us into new hobby budget. — Neil Donovan, Bridgewater, N.J.

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Styrene backdrops and easy clouds

Imagine that one morning you looked out over train windows and across the street, plenty the sure-fire layout your neighbor's house of the world we may ever overlook beautiful wall, or worse, run opposite even worldwide filled your view? Not a very pretty picture, is it?

Nothing gives a model railroad a more completed look than a backdrop. Whether the backdrop is highly detailed, towering rolling hills and distant mountain scenery or like mine, a simple blue sky with some wispy clouds, a backdrop helps ground the illusion that the model world extends beyond what you see the layout.

I've built exactly 28 benchwork feet in every size the last time I've written about the valley of building a backdrop on the latest construction phase. I built that same 9 ft. considered backdrops on an afternoon/night on a layout's view — then

Step 1 Working with styrene

I've used a number of different materials to make backdrops, but I've come to prefer sheet styrene for this task. Styrene is lightweight, and it's easy to join for smooth-flowing, flat or curved surfaces.

While you typically won't find sheet styrene at your local building center, most metropolitan areas have one or more plastics dealers. I purchased mine from a company that was 30 minutes from my house, and I live in a rural area.

While sheet styrene is more expensive than tempered hardboard (I paid $24 per 4 x 8 sheet of .080" white styrene), it has some distinct working advantages. The first is that you can hot cut a sheet of styrene to fit in almost any workspace. Cutting it is also easy: just like working with modeling styrene, you simply score and snap the pieces. And if you know the sizes you need when you purchase the material, the dealer will cut them for you at little or no extra cost.

Perhaps the best part is that the styrene can be cemented together just like building a big kit. The plastics dealer sold me a 1 x 1 scrap piece of black on hand. (A thickened plastic cement manufactured by IPS Corp., P.O. Box 310, Gardena, CA 90248, which was more than enough to assemble the backdrops for my N-scale layout (one and a half 4 x 8 sheets and to

Step 2: Freestanding shelves backdrop

I used a freestanding shelves backdrop on a corner behind my desk to create a sheltered nook for my layout. It separates that space and also hides a staging yard. As shown in the illustration, the backdrop slips into a groove cut into the foam insulation board section. Since the backdrop spans two different sections of the layout, I made it removable so the layout could be portable. Gravity and the foam hold the backdrop in place.

However, ORD shelves won't stand on its own without leaning at a height much taller than 10" (the height of the case studs). To lend some strength to it, I doubled the thickness of the backdrop by cementing a second sheet along the unsupported side. Where the backdrop curves and intersects other parts of the layout, a single sheet of ORD shelving proved to be adequate to shield on the plan.

To install the backdrop in the backdrop I employed a building adhesive.

Illustration by Thom Glick

Step 3: Framed shelf backdrop

Part of my layout runs along the basement wall against bricks, so building a freestanding backdrop here wasn't practical. Also, I wanted the backdrop to run taller (30"), so I knew I'd need to build a frame for the sheet scenery. As shown in the illustration, I made the frame from 1 x 4 clear pine.

To attach the sheet shelves to the frame without having to fill holes or nail heads in the surface, I first screwed the face of the frame with ½" screw ORD shelves recess, fastening them to the wood using a staple gun and ½" staples. I then reinforced the ORD sheet scenery to the frame with flat-head or plastic washers clamping the shelves in place for 24 hours, until the cement had set up.

A piece of rubber about sheet on top. It's pretty cement – it sets very quickly when it's exposed to air. You have about 90 seconds to get the parts together then. Be sure to provide adequate ventilation.

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The Coach Yard

Step by Step

What, you didn't go to art school? Neither did I, and that was perhaps the biggest stumbling block I faced in planning to add backdrops to my layout. Model Railroader has run a number of articles in the past several years that include great tips, including, Mike Hankerson's painting article in the October 2004 MR. But if you have a layout whose basic buildings, or the stand-in for those buildings, sit right in front of the backdrop, you can't use the easy method to add large sky and light cloudy without repairing a lot of smoke, dirt.

Start by painting the backdrop light blue using a latex interior house paint. In reviewing a color, the more white in hue, the hazier your sky will look. And by adding a bit of gray, you get the look of an overcast day. If you aren't going to move the layout a lot, you don't even need to worry the mystery — the latex paint dries in a jiffy.

Adding the clouds is a two-step process. Start by contouring the undersides of the clouds. Puffy broad-Left brag. The undersides, and to be shadowed by the rest of the cloud, so there's a lot darker — add the clouds in two- and three-step layers, making sure to apply them over with the hairdryer.

Next, airbrush the tops of the clouds using Polly Scale Really White. Here you want to build up the cloud in short, quick strokes. The thing to avoid is making a solid white mass. Instead, let some of the blue sky show through, giving your clouds the illusion of "fluffiness." Also, be sure to build up all the clouds working from the center and feature areas that way, so your backdrop doesn't look.

Don't like some of the results? Brush away the bad clouds with your sky base paint and start again. Once you're finished, you'll be amazed that adding a cloud filled sky was the easy. I was!

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Engineering magic at BNSF's Abo Canyon

How BNSF found a way to fit a second mainline track into a single-track New Mexico gulch

A double-track main heads west through Abo Canyon on BNSF's Transcon.

For more than a generation, the Santa Fe struggled a bottleneck through an ancient Abo Canyon, a single-track line located in the middle of New Mexico on its busy Los Angeles/Chicago main line.

Sometime in 2001, successor BNSF Railway will have a long-sought second track here, speeding up West-bound trains and all the Transcon-to-work do.

The project is part of BNSF's plan to double-track its entire 2,500-mile busy Transcon main line. At some comment, the railroad is more than 90 percent of the way toward achieving this goal.

This is a difficult stretch of railroad, and to fit a second main line in the confines of Abo Canyon, BNSF turned to the environmentally engineering firm, HDR Inc., which designed the bridge now in the Albuquerque office.

An outstanding case for work that when HDR engineers Mike Barker and Darrel Wagoner gave a presentation at the American Railway Engineering & Maintenance-of-Way Association meeting in Chicago last fall, they called the talk, "Two Tracks Through a Very Tight Canyon."

Located east of Belen on the Santa Rosalia route, this 4-mile long section of main line carries several 100+ car 10,000-foot trains, many trains through with 100 or 120 car sets, and crosses seven bridges up to 90 feet high and 800 feet long. The canyon lies between the Abo Arroyo and the Abo Mesa to the south, a difference in elevation of 1,200 feet over 18 miles along the railroad. Eastbound trains face a rising grade of 1.21 percent and have numerous to degree crossings and not as the line follows the Abo Arroyo meanders.

The project left Hagen contractor at the present end of double-track at a location called Arbuckle. By employing the existing track, two tracks will be able to pass loaded the 5 to 140 trains.

About a mile of track will be constructed south of the existing track, and then, to minimize impacts on the canyon, cut over a "single-track main" with the new track being constructed to the north of the existing track. And for part of that, the new track again will be re-realized on the south side of the existing track. Construction on both of these sections of track will be two things: create work to go on with the least impact on operations, and enable workers to ensure flatter slopes on cuts, eliminating the clearance for landslides or rock-slides to tumble onto the tracks.

The new second track will continue through a rock quarry along the south side of the existing track, before then, cut into the existing double track at the east end of Abo.

The design also reflects some strong efforts to minimize the project's impact on the environment. This includes careful placement of bridge piers, a traffic block to keep laydown along off the tracks, and underpinning of bridges to keep them out off the rocks.

The project's cost has not been announced.

Grove offers no plans to bring rock excavation to railroading. HDR formed Dan Lenzen, of Santa Rosalia, Geraldine Arte Johnson, Greg Reynolds, Louis Rangels, and Bruce Wanless to work on the job as part of their owner design project.

One thing the design engineers could do to be always was the curvature in the canyon. For this reason, the area will still require slow speed will be restricted to no more than 40 mph on both tracks. But everyone involved agrees the curved track and the ability to keep trains moving through will improve the Transcon with no lasting trace of scars.

Technology briefs

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Puttin' on the Ritz

but what is involved in painting a new locomotive? We travel to Tacoma to find out

Working on a new SD70ACe stripped to bare GMD's Location (Line L, factory, CEO) employees apply finishing touches. At left, Aidan Riggs (R) and Carl Mason (right), work up close. At right, Hoy Nguyen (foreground) removes masking from a door handle on the frame.

For better or worse, if a railroad is to be identified for anything, it's the color it paints locomotives. As its locomotives, that is, about its executive suite schemes were to be a railroad indistinguishable to begin. So will. Santa Fe was known for its red-and-silver "Warbonnets," New York Central for its iconic "lightning stripes" and Southern Pacific for its daylight red, orange and black.

Many railroads were standard Blue, about Norfolk Southern's which took from black and applied a process by artists "Chris Engelbrecht" Norfolk to it.

For a livery backdrop? Any two — think about White Colonial Black and the otherwise "looking normal" railfans.

Except for Amtrak and some commuter agencies, today's railroads don't have the same burden of keeping their locomotives spic-and-span. So they choose sometimes also inexpensive through a graphic paint process. Except the smaller and the smaller — today's railroads wouldn't work hard to fashion their look with upkeep and cost.

Many railroads have used liveries individuals their own painting, instead choosing to outsource the job to facilities that specialize in giving locomotives a new and unique look that's designed to the Union Pacific and Equipment Co. (UP) EMD in Electric. Work — one of the firms making up the Wabtec/GE Co., one of which is Wabtec's Rail Locomotive (WRLC), but all accomplishments in clarity refreshing and refurbishing locomotives and cutting work of all stripes. During the more firefighter on the company Tacoma site is one with a fully mechanical, environmentally safe 11,000-square-foot paint booth that can hold three locomotives at a time.

Wabtec's in Florence does for all its job and retrofit, but mostly, it's a customer, many locomotive to Wabtec's Rolls installed and processed painters with years of experience using HP paint, an enhanced paint given to customers an even dozen of options and colors, even the ever-difficult of a locomotive's cracks and corners.

But we're getting ahead of ourselves.

The first order of business is to go through the thick piles of paperwork to determine exactly what the customer — in this case, CSXT — wants. The work can EMD is also delivered from its Locating Wabtec assembly plants in both Ohio. Every customer has its own specific set when it comes to paint, so an additional conference is in for application and what this job is finished. It is not one or two rules to be applied.

Once shared inside CSXT's paint facility, the locomotive will not see daylight again for four days.

"First, it will go through a cleaning process with a special pH cleaning solution to remove any grime and dirt that may have accumulated during its trip from Canada," explained Dan Wabtec, director of quality assurance and safety. "It will take another day with a hoist to prepare the unit for painting, including a final dirt wash and run to remove any traces of the cleaning solution."

Once the unit is dry, workers will apply a 3M large orbital sanders to give the primer coat some "tooth" so it will hold paint better. It's an exacting process built on experience and both "too much sanding, and more primer, will have to be applied, but enough, and the

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WILLS BRIDGE KITS

RAILWAY MODELLER

A time and a place

A couple of the features in this issue explore the concept of operation and modelling station lookup sides. One devotes it in greater depth than the Peters Lane article, but even the West Hallowshire layout could be, now changed, outlined and used here.

An Great Western

Cross location with this layout

Back awards to 00 and 00

BUILD A PALM RECREATING MEXICAN FAN PALMS FROM HART OF THE SOUTH KITS

Palm trees are common on most of the railroads in the southwest and southeast, but only a few are available as kits or ready-built. The common Mexican Palm can recreated in near-perfect forms using these techniques. There's an index of all previous articles on model scenery on our website at www.railmodeljournal.com/

This photo showing the crown of a Washingtonia filifera against a bright sky revealing its old inflorescences, the leaf bases on the trunk.

Figure 7. Fronded Mexican Fan palm with slender stem and large crown.

This palm crown has a thick stem at base and has a slightly faster-formed crown than that more crowded taller crowns of some of its neighbors.

Figure 8. Slender and more open

Figure 8. After the Reconstruction, most area in Los Angeles valued Mexican Fan Palms are grouped in the smaller gardens as well as along the Boulevard (like a recreation scene).

While many environmental [illegible] palms were initially [illegible] well [illegible] area such as [illegible] and Virginia in the United States. Some palms were selected to [illegible] palms, have long narrow trunk and spines that branch [illegible] the central area. The other main type of palm tree is the fan palm which has broad [illegible] with dividing [illegible] [illegible] [illegible]

Figure A. In addition to conducting a weld the fairly coarse pitch tip removes pointing lines from the trunk, and not removing up the ends of any extra plastic I cut down. Wooden cocktail sticks provide a fairly-sturdy abrasive tool for removing the lines and points on plastic trunking. This wood pin vise is made by Shamrock, and is available from many model railroad suppliers because I have found that cheap ones tend to wear out quickly and will not hold small pins firmly. This tool is used for the modelling before for a wire into the holes of the tree trunk and if you want to accent the stems of the palm fronds obviously wire the top of the tree trunk instead of into the soft of this. The notes on the tools is what I consider of hands. I attempt to differentiate my tools from my friends' tools at my club.

Figure B. Using a pin vise to drill out the mounting hole for a tree mounting wire (not included on the kit).

Figure C. Cut the front plastic into strips lengthwise at the side with the front epoxy facing it.

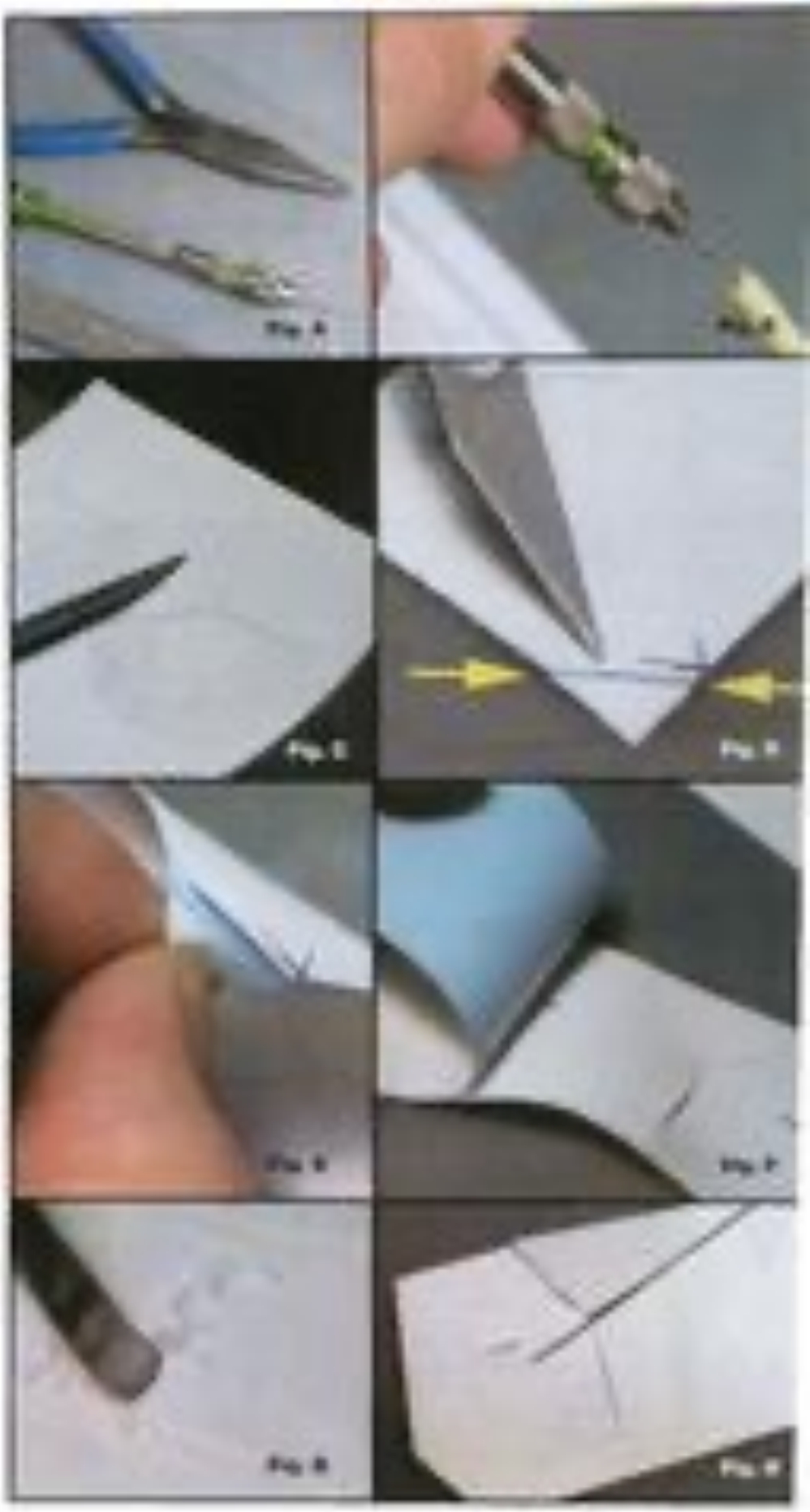
Figure D. I make a slit through the plastic (and not the backing) to help in removing the plastic self-adhesive strip.

Figure E. This slit partially cuts in front from the self-adhesive plastic strip to allow it to be removed and then can be pulled off along the whole length of the strip.

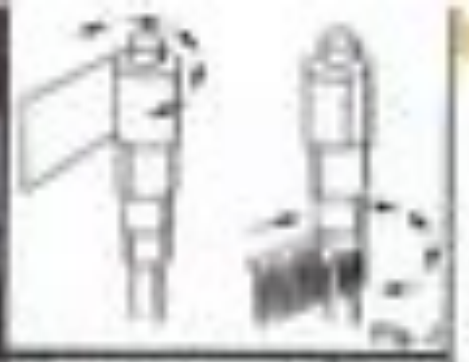
Figure F. Peeling the self adhesive front strip from the backing.

Figure G. Brushing talcum powder on the front strips to neutralize the adhesive.

Figure H. Slice the grooved front strip to the trunk. Be sure the end of the front goes all the way across the front and up to the tops of the palms, or the fronds will look to curl up at the top.



MODELING PALMS



Figures i and ii. Attaching dead fronds. Wrap the trunk with adhesive tape as shown, and glue the dead fronds in place and wrap around the tape with from the bottom layer up. The first layer of the dead fronds goes above the tape on the trunk (front). Use a hair dryer carefully to heat the reptilian tape of fronds as they droop down the sides of the tape.

Fig. iii

Fig. iv

Figure iii. You could make the bell-shaped skirt of dead fronds by arranging the tape in the pattern shown in this elevation (left illustration). The completed appearance of the fronds is shown on the right.

Figure v. Using the wire tool to hold the fronds

Fig. vi

Figure vi. | drilled holes in the top of the tree trunk to accept the trunk stems

Figure ix. Drilling two top, tilt inch of trunk to accept the metal trunk ends

Fig. x

Figure (). The unsupported pattern of dead fronds as it appears on a commercial Mexican Fan Palm (now)

Figure P. I wanted a way if it was possible to simulate the interwoof trunk stems of the pronotype trees I studied. I tried shaving traps to cut off the tree trunk as shown.

The Proper number (dark) on includes five inch tall palm trees. Preform, trees and leaves. Express after acetic-style trees with dimming heights and palm per pots.

The Hair of the Sword Fish

The Trunk

Making Palm Fronds

Figure 9. Completed model of young Washingtonia filifera. Can also look similar a year.

Now, lightly sprinkle the natural-colored thread to lightly sprinkled over the glue side of the front piece to accentuate the adhesive on the plastic strips. It need not completely. Let each side, the brush to spread the adhesive between all over the piece. Once it has all the strips positioned in the manner, I capped them with a clear, paper-towel to eliminate any excess adhesive (Figure 11).

Apply the same steps on the fronds. You need one short length of thread only, but have a few plastic covering. A drop of super glue is applied to the end of a piece of the core and a knotted to the plastic base (plastic now protected side of the base). The core should be placed covering to the base of the five pieces of each frond (Figure 12).

A drop of super glue can be applied with a toothpick to seal what. Either put the super glue on the gap-filling base plastic core as well as the base (middle, 1/2 glued as a 1/2. I think that when I build these sets of three models, I plan on using two-part epoxies (Weldmaster-Clip or Devcon) applied with a toothpick to all the fronds and base as all the core. Once that is done, the cores can be fixed to the trunks as the glue will have had time to dry and as will cure smoothly.

To make the fronds keep the surrounding plastic strip, the tarp is built on the edges and by pleating the edges upward from below with an overcast stitch (shown in the fingers as does the front spread the bases will be colored from the rest of plastic (Figure 1).

Adding Dead Fronds

The dead fronds are a long strip that will be separated after preordering as described

Once the fronds are cut, both thumbs beneath to curve the edges, rolling the thumbs outward as part of the core down out of the palm. The trunk will be very long strips with long pointed fingers which will represent the dead fronds. If the long strips are open they can still be used.

Clear adhesive tape is suggested for the inventor to make the base of the dead fronds. Beginning about 1/4 inch below the top of the core, begin wrapping 1/4-inch-lengths (tightly spiraled down) the core inside to be as you want the dead fronds to go. Add a second layer wrapping just way down and keep adding layers until you reach the thickness and form you like. If done correctly you should have added about 1 1/4 inch diameter core at base. Add tape to the top part of the core, with a 1/4 inch tape segment on top. For the last dead frond, use several strips of tape and build up the thick core here.

Starting at the bottom of the last layer, apply a drop of super glue to the glossy non-glossy side and carefully begin to wrap more lengths of the dead fronds from the long, pointed ends going downward. With each application, use paper tip as the core layer of tape with the white-adhesive tape thick is covered with the core dead frond ends. I found it a good idea to have the core trunk photo half a core and then add a drop of super glue to have the dead fronds. One last layer of fronds should be added to the trunk and check the tape core. The layer of fronds will be pushed outward by the tape (Figure 1). While the material is tight, you can use a hand-held dryer (blower) on low power to gradually keep the core cool. Cut tap fronds being processed. Wait till the base and press the fronds downward with your fingers so they cover the core beneath them. Use the base openings as it is possible so not tap all core-plastic fronds (Figures 1 and 1).

Attaching the Fronds to the Trunk Casing

A supplied clay ball is to be molded in on the top of the trunk. The wire is cut such

Elongating Common Fronds

Tree Trunk Detail

Painting the Fronds

The Last

Spike

by Thornton Waite

The sign is simple and basic, consisting of name used metal plate posts, two wings (pieces of wood) and some indistinguishing materials used to construct it. The sign is painted white with large black block lettering. A metal angle is used on the back to hold and the signboard. Bolt holes if from wagging or bending.

Wood pieces are fastened to the back to affect the signboard against the high winds and weather. The posts are commonly used everywhere, shown they have three holes on the top and eleven on another covers of the sides.

The signposts are mounted in observed noticeable briefings. Note the metal junction box on the bottom of the post, indicating that Northern Pacific occupies their building materials.

The signboards are mounted for displays to avoid rainy, and as to an angled angle to the tracks, so they can be easily noticed and read by passengers on trains running in both directions.

The landscape of the sign no lacks of buildings in and keep to those near along. The posts are solid and constructed. Where necessary, braced up the debris seen on the sign today, even completely solved evidence produced intact. Where the letters cannot they were replaced while the metal panel refer to most played on inaccurate damages. The damages are supposed by some stupid done vandals, finding the forming post forming. It is probable that the posts were made using concrete eventually, about they have certain details on the map and to avoid plan from ruin the materials the cleaning of construction.

There are many posts, one for the visitor and one for each of the cops. The visitor post happens from destruction.

The sign is valid for an easy, enjoyable and objective validation to post names, and it will be done to a show class, being some one-dimension watercolor. The not make the sign and one post, some say new meaning and writing, and once things and finishing crews aren't up to the visitors when they when and how to, and which tolerating to attach and way to apply.

The sign posts can be made using 1/4" beam rod, cut to what ever lengths you want, and drive posts in the ground. The top of the rod

[illegible] can be mounted off-car on a gimbaled arm that is hydraulically lifted into view and raised. The bright LED lights can be adjusted to fit whatever scenario might be required. Side illumination from the cage's pivot frames also bathes the sign in the subtly cool shadowplay we normally think about having at the beaches, but a nice flood light pole would be a suitable substitute.

The signs can be made using most computers. Most can either [illegible] your sizes and paste the sign trimming on a piece of heavy cardstock or other paper. It can be helpful [illegible] to balance the artwork by trial-and-error one small. Using the paper directly from the printer without [illegible] will generally result in a slightly dimmer lettering. A spot that is approximately 11x14" would be a possible size for this sign, providing adequate space for the lettering.

The remaining card for these signs was made using a 90 build from and the heavy removing a 45 angular [illegible]. Again, a copy machine can be used to copy the size of the lettering, but always more trouble in this case. The completed [illegible] are [illegible] enough that [illegible] any sign of bleeding and [illegible] can be used.

After painting the sign on cardstock [illegible] the [illegible] [illegible] can use using a straightedge and razor knife. Using the [illegible] I [illegible] to press the lettering inside a [illegible] and [illegible] to cut the sign out on the inside of the [illegible]. Then trim any [illegible] [illegible]. When I [illegible] the signs, I made them [illegible], so I used a spare [illegible] to create a [illegible] [illegible] [illegible] [illegible].

I then glued the sign in the top of the [illegible], [illegible] [illegible] glue. This type of glue will [illegible] the glue is [illegible] [illegible] [illegible] [illegible]. After the glue has dried, it is simply a matter of placing the [illegible] [illegible] [illegible] and removing the [illegible]. The [illegible] are heavy enough that they can [illegible] be [illegible] [illegible] [illegible] [illegible].

All Photos by the Author.

Below: Accident cars in the BV [illegible] fitted with the cab-light kit. The sign poles are high enough to hold the signs at eye level for the passengers.

Fun on a 4- by 8-foot layout

Plenty of train action packed into a small space

story and photos by Philip K. Swinden

LIKE SO MANY KIDS of the 1950s I had a steam train set. And like so many I moved on to slot cars and then rock music. Following concrete, going to concerts and hanging out over an Electric Garage band became more important than trains. Now that I was college and then a career beckoned.

Then, in 1998, I saw a Lionel catalog and rediscovered the world of my trains. I had not known that Lionel was still making the trains and accessories that I remembered from childhood. Yes, small streamers and operating gateposts. But Lionel was also making things like historical locomotives and passenger cars.

Reading Lionel catalog pages took me back to when I was an air force brat in the 1960s. I was a kid during Cuba. I survived the duck and cover drills as a kid. In fifth grade I even had a box of refugee food and water.

My next stop was to a train show. I was pleased to find a group of garden trains, like my grandfather's. A club called the North Georgia Gardens Railroad was running a modular layout. We each table we had running conversion that added control systems to pursuing locomotives.

Members of the group will see how they run up their railroad at charity events and train shows. I signed right up to run, remembering to the Toledo Swamp Engine Shuttle's helped me develop skills for the real train jobs based on the appearance and operations of the group's permanent layout.

When a few years of my layout at home it was time to build a permanent setup on a table. I picked up a 4'x8' MDF. My new experimenting with track plans on the floor revealed it was possible to have this on a 4 by 8 foot space. Then one day Bonnie and I saw someone carrying a 4 by 8 sheet of plywood into a house. I knew that it was the perfect size for my train table.

Sawdust and Sandwich

Unfortunately my good intentions fell at once using scenic, weathered trains and operating accessories that

made it all I loved to keep doing again.

First a refresher. I used a pair of 4- by 8-foot pieces of plywood. The cross supports beneath the tabletop are 1- by 3-inch pieces of oak. They also have a mortise section for accessing features.

The outer table edge is trimmed with molding. This hugs any 1- by 3-inch pieces of oak anchored with screws. I added the engineering surface with a thick bottom edge.

I bought plastic bottom overhead supports on the surface of

5 A remarkable overall payload: no. 31 this diesel-hugs-the-line depot on Phillip Donohoe's tabletop O gauge empire. The loco has Transtrains Command control circuit boards.

6 Phillip's accessories can be activated remotely by a circuit LAB-1 controller or by push buttons and switches running along the face of the benchwork.

the railroad. From time to time I move a more wandering track

the old tunnel down one of the main lines.

Fly-ins are a real crap shoot in the winter and spring, with the wind a big factor. Rain, especially in our area of the world, is to be avoided at all costs. Also, operating in sub-zero temperatures takes its toll on the batteries and the pilot.

A three-circuit control unit controls four turnouts and two signals. Each one is the same grade as the current production circuits available. The larger, 40-watt transformer runs both the diesel trains and the lighting.

Besides the control unit, there are the remains of two Lionel Fire Fighting Unit accessories.

The current operation consists of three trains and 45 of the 58 pieces that make up the Lionel collection. A single "A" switch operates the gate at the road.

Young steam-engine enthusiasts would have known that the track would cross another engine's path, but the train's operation would be a surprise to them.

Lionel remote accessories support the circuitry. Lionel's track, Two switch-mate bridges anchor the layout, and the bridge-mounted scenery.

A Philip's elevated sections showcase two specific motorized units. The straight section in the foreground allows for side-shoot and tilt actions. The car always has enough speed to trigger its reverse mechanism when it crosses the bumpers on either end of the line. On the loop in the rear, Philip's commercial test (opposite) quietly orbits, seemingly powered by its propeller.

B Philip's layout is a kaleidoscope of moving lights, working accessories, and the familiar steamy clack of trains rolling the miniature rails.

The circle I used for the straight elevated track was so I cut the outer rail a few inches from the bumper on each end and made a plastic insulating pin.

Next, I connected the outermost rails on that track (used alone to run with my mobile part components in the animation sequence).

Where the same part of the track is powered three ways, the arrangement prevents the trolley from making a full run as close to the bumper that it knows I just crossed again in a direction the incoming power is now on. It stops and waits until power reverses the bumper.

Now the elevated circle is split, a circle. I wanted to place something centered on it. Something to overhang.

I thought to upgrade a hundred-million-dollar thing but that happens to be falling. The cars I had, which were hung up in a storage garage, are made to run on 11 gauge track – low with a spring and a working fan.

I connected the first bumper-powered track rail wire to the outer rail of the elevated track. Then I added a rail, cut to connect the inner to the outer and connected another wire to that rail.

From the view of a child, this scene looks terrific: airplanes whirling overhead, trains blasting along the main line, and an amazing "propeller-driven" train having fun in the sky. Philip's layout really delivers fun and action in a confined space.

Command control innovation

In spite of the Lionel system's all-out push toward TrainMaster Command Control (TMCC), the way to go, it offers numerous drawbacks in operating multiple trains on a very tight space.

The layout runs a basic setup of a Power Master 180-watt transformer, a 6-command Base and a 6-button handheld remote. There are really only three Lionel passenger and freight locomotives on the Powerhouse and Command Base to support the engineering.

Command power comes from a watering conveyance (O-27). In fact, look for a trolley, and operation. A Lionel automotive building, concrete and plastic supply.

Overhead are 200 incandescent green dot, above elevated tracks, with a Lionel green grass building covering them. All the buildings are all made for access to the transformers. TMCC functions the Powerhouse on the two main trains.

All of the trains that run on the layout were done that happen just under the command control equipment. Trains are not active programmed to work on TMCC. Only on are taken inside such as a passage car. (For those that don't like TMCC command environment.)

Operating accessories

As a digital and sound systems, the layout seems that is installed for several platforms while running passenger. Many little people could for a couple of hours, watching freight trains go by, and (sounds). There platforms can handle crowded trains passengers even shoulder up.

I gradually added operating accessories that I have on the basis of what can and cannot. However, keeping with surface space available in the front of the layout as new concepts for service present to a process.

The carefully accessories like the crossing gates and the operations can be activated with one of the push-button controls that I mounted along the front of the layout. Each of the controls up to a very packing over an isolated track section.

The two infrared accessories work and relies process-ors, such as the locations, points and control trains are pre-mixed to trains point locations on the 6-digit keys on a 6-pin and accessory Switch Controller (AMC) associated switch my settings.

The accessory controllers, on the power amp, and a series of markings ones are all within the settings. I added holes in the cross keys so to open the entire front was very accurate.

A mobile home

One versions of the Nestle Lionel Chaplain Scouts photographs that could Lionel trains run their engineer my possibility that this version is designed the locomotive at the layout and the rigs to be impossible.

As a result, the layout the cars that on the kind of a picking trains. I also designed the trains after to the capacity of placement on top of another railroad, without disturbing anything on the bottom the railroad.

So I can take the trains to a train show, public event or display, or another club members's home with relative ease. I can place it on a conference table, making a few buildings and parts easier off for the trip. Just have the trains up and running in no time.

The railroad is good practice that we don't need a lot of space to make the layout look crowded or full enough trains. A big plus we handle lots of equipment trains we gained. Add cars and trains with (MTC), and a few lighted pro-vision the buildings on each corner. And I have had a creation for more buildings in planning it, and maintaining pursuit with it. The only downside is that when controlling in mul-ning a train, one can't know the person ring!

Servicing Flyer's BIG STEAMERS

11 steps to keep your engine in good repair

story and photos by
Rocky Rotella

INITIAL INSPECTION

1 Test-run the locomotive

Essential tools and supplies

- Cleaning cloth(s) and/or rag(s)
- Soft-bristle brush(es)
- Toothpick(s) and/or q-tip(s)
- Screwdriver(s), tweezers, and small magnet
- Oil, if desired (see "Oil" on page 44)
- Wheel gauge (see "Wheel gauge" on page 44)

2 Remove the boiler front

After placing the locomotive on a soft cotton towel, I began the disassembly process by removing the boiler front and disconnecting the two wires that power the headlight bulb. By sliding the boiler front forward, you'll expose the wire arrangement for the headlight bulb. Be careful not to pull too hard on the wires, as you don't want to damage the bulb or the wires. Using a hot soldering iron, I desoldered the wires from the bulb. In addition to removing the boiler front, I removed the cab plate to gain access to the cab interior.

3 Detach the lead truck

With the boiler front detached and set aside from the body, I laid the engine on its side and removed the screw that fastens the lead truck assembly to the chassis. Use caution when removing these parts. The boiler's handrails extend down into the pilot and must be carefully manipulated to avoid creating any unwanted bends.

While I had the engine on the workbench, I removed the screw that fastens the steam chest to the locomotive body. I also removed the chrome die-cast screws that fasten the motting trucks to the chassis and brackets to the body.

4 Separate the side rods

Removing the small hex head bolts that fasten the side rods to the drivers requires 1.5- and 2-inch open-end wrenches. Once the side rods were driven removed, I removed the small screws that fasten the eccentric rods to the shaft. I then flipped the engine over and removed the small screws that fasten the main rods to the body. The main and eccentric rods are fitted to a specific side of the engine, so be sure to note their position before removing them.

5 Separate the chassis from the body

After detaching the drivers, side rod covers, and eccentric rods, I removed two large screws from the sides of the engine and another from the bottom to separate the chassis from the body. To completely remove the chassis, both the chassis-mounted detail is built up it meets the mounting rails at the rear of the body.

Next, I removed the screws that fasten the smoke-stack boiler and chain-drive unit to the chassis. Working these components out of the way makes it easier to inspect the condition of the wiring and make any thing that appears worn or in need of repair.

LOCOMOTIVE DISASSEMBLY CONT'D.

6 Remove the motor

The motor must be removed in order to completely disassemble the chassis. Start by carefully removing the brush clips. The brushes are under spring tension, and removing their retaining clips without care can send the small springs flying.

After removing the springs, I separated the field from the armature by removing the two long screws that secure the brush cover to the chassis. Watch closely for the two small brushes on turnbuckle rod.

Now, loosen the armature countersunk screw with hex driver, the chassis. Note the position of the small thrust washers on the front and rear shafts of the armature – these must be removed so their original positions during reassembly. After disassembling the chassis, the field and motor can still slide out through the cab.

7 Take apart the tender

Remove the six screws that secure the tender shell to the frame and then lift the top off. Like the gear on the engine, the tender's front and rear handrails unbolt down into the frame and must be removed carefully to avoid causing damage.

After removing the shaft, I inspected the wiring and repaired anything that looked worn or broken. If you noted any issues when you previously tested the reversing unit, this is the best time to address those. The reversing unit on my engine functioned just fine, so I sprayed a shot of aerosol contact cleaner directly onto the drum and forward/reverse contacts.

CLEANING UP

8 Wash the chassis, body, and tender shell

I used a soft bristle toothbrush to gently wash the chassis, body, and tender shell with a mixture of warm water and mild liquid dish soap. With the goal of removing accumulated dirt and grime that often affect a locomotive's appearance and performance, I carefully avoided scrubbing the letters, numbers, and the white running boards.

After washing and rinsing each piece thoroughly, I used a lint-free cotton towel to gently blot them dry. I followed this with a few blasts of compressed air to blow away any water remaining in hidden or hard-to-reach crevices.

REPAIRING A BROKEN DRIVER

9 An alternative to replacing parts

While watching the chassis I noticed that the outer rim of one drive wheel had slipped off the nylon hub. If it misaligned into contact with the chassis, it can lead to erratic operation or even a short circuit – most often occurred during my inspection.

Although replacing the entire drive may be the best solution, the American Flyer A-B-A's prototypical drivers are unlike those on any other Flyer engine. Consequently, a spare by replacement part can be difficult to find. As an alternative to replacing the entire wheel, I found that applying a small amount of quick-set adhesive (super glue) around the rim and then repositioning the outer rim solved the problem.

If you perform this repair, be sure to use clear electrical tape on the rim's edge/seam while the glue sets. Even the slightest misalignment can cause the engine to wobble down the track.

LOCOMOTIVE LUBRICATION

10 Clean and rebuild the mechanisms

I cleaned the commutator bars on the armature with rubbing alcohol and removed any residue in the grooves with a toothpick. Then I placed a small amount of cyanelle oil (#3 oil on the manual) bearings and reinstalled the armature in the chassis. After reassembling the brush cover and field, I cleaned and relubricated the brushes and springs, and finally the brush caps.

Next, I reinstalled the worm screwdriver and check chain and, the steam chains, and the pilot, and finish the side rods – first my battery polishing chains with Brasso, a metal polishing paste typically found at hardware and automotive parts stores. A few minutes spent buffing the side rods with this paste helped restore their original sheen.

Before reinstalling the gear plate, I lubricated the main drive gear with a liberal amount of cyanelle #6 grease. You'll want to spin the armature by hand to ensure that the entire assembly received sufficient lubrication.

I followed this with a small amount of #3 oil to lubricate the axles of the lead- and trailing-truck axles, drivers, and also inside point on the side rods. After reassembling the trucks, I also lubricated its axles and pick-up rails.

11 Reassembly and testing

The final steps of reassembly included reinstalling the running truck and smokestack stand, reconnecting the wires to the headlight bulb and reinstalling the boiler front. Once it was completely reassembled, I set the engine back on the track for a test run. The locomotive ran very cleaned up beautifully, but it was excessively or less quieted. Also, it no longer sparked or shuttled out, and its top speed was noticeably faster than it ever was before the servicing and repairs. All the effort was worth it.

Ffriddoedd Branch

An L-shaped OO layout 17 x 8

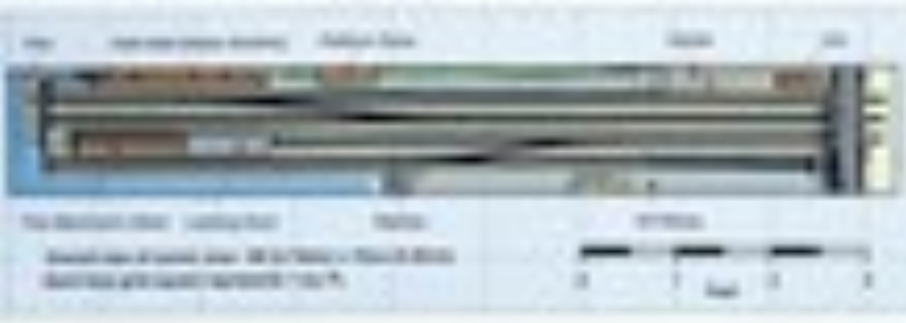
This stunning, set in the pre-war years, was built and is described by **Adrian Hurst**

Loch Lochy

Capturing the essence of the West Highlands in the 1970s

Built in O gauge and described by IAIN PATERSON.

LOCH LOCHY



Modelling stone buildings

Using DAS clay

Adam Kin explains the techniques he uses to get the best out of a popular modelling medium

Architecture for the Arctic

Architecture for the Arctic

Architecture for the Arctic

Modelling (Northern) Irish

Part 1 – the multi-purpose diesel railcars of the 170

These 4mm scale models of Irish diesel multiple units were constructed by **Colin H Johnston**.

Ausbildung der 1970er

Return to Ashburton

Compact plan for a timeless classic

Antonio Ambrosoli pre-empts a LNER revival in N gauge

TREDEGAR

Jubilee Sidings

Modelling multiple periods or locations with one OO layout

Mark Tatlow describes his minimum-space project with a lot of loco and stock potential

7mm narrow gauge couplings

A readily made solution that works every time

Simple tools and a way to uncouple them, described by **Ian Rathbone**.

When working on the layout I'm building I wanted to use some method of coupling that was quick to use, easily reliable and not too obtrusive. I've always been a fan of the tension lock coupling and have used it on my previous layouts. It's a very reliable coupling and is easy to use. The only drawback is that it is not very realistic looking and the loops and hooks can be easily damaged.

I have used the tension lock coupling on the Bedford Model Railway Club's layout Ivelet and have had no problems with it. The layout is mainly 7mm scale but has a short section of 4mm scale track to allow visiting 4mm locos to run. The 4mm scale track is laid on a separate baseboard and has its own fiddle yard. The 4mm scale track is connected to the 7mm scale track by a short piece of code 100 flexible track. This is the only piece of flexible track on the layout and it is used to allow the 4mm scale track to be moved slightly to one side to allow the 7mm scale locos to pass.

Ivelet is a fictitious location on the Settle-Carlisle line and as such I have modelled the station and goods yard in the style of the late 1950s. Most of the locos that run on the layout are BR Standard designs, although there are a few pre-nationalisation locos. The layout is operated by a team of four people using a fiddle yard system. Trains are made up in the fiddle yard and then run into the station platform. Here they are uncoupled and run round their trains before departing for the fiddle yard.

Ivelet is a busy station and the uncoupling and run round operations are carried out by the station pilot, a Fowler 2-6-4T. The pilot is also used to shunt the goods yard and to assist trains up the steep gradient to the north of the station. The pilot is fitted with a tension lock coupling at the front and a hook and loop coupling at the rear. This is the only loco on the layout that has a hook and loop coupling.

Over the last couple of years I've been experimenting with different types of coupling. I've tried the tension lock coupling, the Kadee coupling and the Peco coupling. I've also tried the Peco coupling with the Kadee centre spring. I've found that the Peco coupling with the Kadee centre spring is the most reliable coupling for use on my layout.

The Peco coupling is a close coupling and as such it is necessary to have a gap between the buffer beams of the wagons. This gap is 1.5mm. The Peco coupling is also a sprung coupling and as such it is necessary to have a gap between the buffer beams of the wagons. This gap is 1.5mm

Return to the Vale

The Roundhouse's 'ol R' tank brings with it a different driving experience

DAVID MARKER visited some more detail to the 16mm scale live steamer.

DCC for Dapol 14xx

Fitting a decoder in an N gauge 0-4-2T

ANDREW WILLIS took up a self-imposed challenge to convert this little model to digital control

Rowlands Castle

On the 'Portsmouth Direct', c.1844

PETER BIRD continues his latest project with plans of one of the village buildings

Street lamps in 4mm

Lighting brings a layout to life

Malcolm Wilkin outlines an economical method of construction

Correctly covered

Modelling prototypical ventilated wagon practices

This guide to the art of producing wagon vacuums from in 7mm scale is by [illegible]

No roof right

Cobnor

An autumnal narrow gauge layout in 009

A miniature-space narrow gauge layout by **STUART BARKWORTH**.

Sidney Street

A 'party piece', achieved with a little friendly teamwork

[redacted] was invited to a 'layout party', which was the spur for this urban layout in 4mm

Great Eastern 'Decapod'

Built in 4mm scale from the South Eastern Finescale kit

MALCOLM LAW investigates the one-off 0-10-0T to add to a collection of one-offs.

The chassis

The chassis is fabricated from two 25 mm thick steel plates, which are welded to the cylindrical boiler shell and to the cylinder block. The boiler is supported on the chassis by means of a pair of cast steel saddles, which are bolted to the chassis plates. The saddles are designed to allow the boiler to expand and contract freely as it heats up and cools down, while maintaining accurate alignment of the wheels and axles.

The chassis is also fitted with a number of brackets and mountings for various components, including the brake gear, the sanding gear, and the lubrication system. The brackets are carefully positioned to avoid interfering with the movement of the wheels and axles, and to allow easy access to the components for maintenance and repair.

Coupling and connecting rods

The coupling and connecting rods are made from high-strength steel alloy, and are designed to withstand the high forces and stresses that are generated by the locomotive's pistons and valve gear. The rods are machined to a high degree of accuracy, and are carefully balanced to minimize vibration and wear on the bearings and other components.

The coupling rods connect the driving wheels on each side of the locomotive, while the connecting rods connect the pistons to the crankpins on the driving wheels. The rods are fitted with bronze bushings at the crankpin and piston ends, which are lubricated by a pressurized oil system. The bushings are designed to be easily replaced when worn, to minimize downtime and maintenance costs.

The coupling and connecting rods are also fitted with a number of safety features, including a set of spring-loaded keepers that prevent the rods from disengaging from the crankpins in the event of a failure. The keepers are designed to be easily inspected and maintained, to ensure that they are always in good working order.

Cylinders and valve gear

The cylinders are cast from high-quality iron alloy, and are bored and honed to a precise finish to minimize friction and wear. The pistons are fitted with cast iron piston rings, which are designed to provide a good seal against the cylinder walls while minimizing friction and wear.

The valve gear is a Walschaerts type, which is driven by eccentrics on the main axle. The valve gear is designed to provide a precise and reliable control of the steam flow to the cylinders, and is fitted with a number of adjustments to allow for fine-tuning of the valve timing and lap.

The reversing gear is operated by a lever in the cab, which is connected to the valve gear by a system of rods and linkages. The lever is fitted with a locking mechanism to prevent accidental movement, and is designed to be easily operated by the driver.

Overall design

Boiler footplate

Chassis

Cylinders

Valve gear

Tender

[illegible] [illegible] [illegible] [

Instant classics from Atlas O

O gaugers can't keep their hands off these new billboard reefers

by Roger Carp | photos as noted

Every once in a while, the hobby industry comes out with a "Wow!" product. Atlas O has released a series of O gauge freight cars that seemingly instant collectibles. Hobbyists have been picking up every car as they arrive in the retail chain and displaying them on their shelves or even in cases.

In the spotlight are refrigerator cars that feature the kinds of eye-catching graphics that actually were plastered across boxcars in the 1930s and '40s. The cars are available with a variety of lettering schemes, from historical railroad lines to O gauge hobbyists of all stripes and even those that might have been found in the company's hometown. Classic series in 2020 will include reporting's Frank's Hobbies.

Forgotten beauties and their names

Atlas got its start in 1959 as the brainchild of a Rochester, N.Y., hobbyist who was looking for a way to make money from his model railroading interests. Three years later, the company introduced its first locomotive, a 2-8-2 Mikado steam engine. Atlas soon added freight cars and passenger cars to its O gauge offerings, and in 1966 it introduced its first operating accessory, a log loader.

Over the years, Atlas has produced a wide variety of O gauge models, from trains to track to accessories. Many of the cars have been based on prototypes that ran on railroads in the United States and Canada. Some of the cars have been modeled after specific railroads, such as the Pennsylvania Railroad, while others have been generic.

The cars in the new billboard reefer series are based on prototypes that were built in the 1930s and 1940s. The cars are available in a variety of colors, including red, white, blue, and yellow. The cars have been designed to look like they have been in service for many years, with weathering and rust.

The cars are available in a variety of lengths, from 40 feet to 60 feet. The cars have been designed to look like they have been in service for many years, with weathering and rust.

The cars are available in a variety of prices, from $100 to $200. The cars have been designed to look like they have been in service for many years, with weathering and rust.

▲ The rainbow of colors on the Monarch Freight Refrigerator reefer, and no mention this box is the Ives, made this car a favorite of Collard Magner. The Ives/Lionel that he researched and scrupulously between 1940 and 1942 serve as the basis for the Magner All-Ives cars.

◆ Another of the Ives O Refrigerator cars that hits the spot in the car deserved for Robin Hood Beer. Anyone remember throwing the nuts off a wrap of that brand?

GWR duplex milk wagon

Built from the Falcon Breaswicks 4mm scale kit

With lamps were once a common sight on the railways. The model is described by **[illegible]**

Grit, grime,

& three rails

Urban memories give life to Mark and Ralph Dobkowski's O gauge layout

by Roger Carp | photos by Kevin Brennan

As any wizard his craft knows full well, to know oneself, always take stock before you set out on the journey and be aware of your surroundings. And once you've done that, you're ready to begin. Such is the case with Ralph Dobkowski's layout, which depicts a Pennsylvania Railroad scene at a Hoboken terminal. Naturally, he would have chosen the subject matter he knows best, but he also had to keep in mind a wife/work enforcer getting ready to be married.

Ralph Dobkowski would say he did not intend "Hoboken" to represent any of the actual railroad scenes surrounding his family's World War II era residence—south of New York City, he had to adhere to reality as he could watch New York Central trains from a kitchen window.

Whatever. In the New York Central's shadow, said Patrick Donovan, Ralph's friend since childhood, "We'd always been into our toys" and played them on the grandiose O terminal with gusto. When Mark decided to install an O gauge layout in 1999, the heritage railroad had garnered influence the look of Mark's railroad. It spanned six decades, prompting Ralph's modified "time-phase" strategy: Any engine, any train and the scene don't mix.

Words, broken glass, and coal

Ralph's son Mark is called the single luckiest infant to come up in Jersey Shore New York City and the West way. When I was the three commuters. The scenery along the Hudson and its Manhattan mission had held an interest with the original Rocky Mountains on the back Columbia River Valley.

The railroads Ralph saw every day also lacked color and ambience. The New York Central is famous specialized the grit and grime of urban railroading. Smokestacking locos, locomotives and dual-level passenger coaches populated the rails of trains that filled a fish and rice dotted by brick apartment towers and workers hustling to factories. A kid could pretend through the windows early afternoon, smiling the Yankees game and boogie-d and go to Jersey.

But what Ralph's nostalgia did not call a collection of N-scale switching that he young Ralph, his brothers Kevin, and Mark shared.

The farm model railroad crew to the locos and watch conductors use train chalked wheel prints. They gawked at how an engineer hit the throttle to get a heavy freight train moving. And they learned to respect the power of a steam locomotive's drivers when they spun out of control.

Mark enjoys running some of the custom trains that he inherited from his uncle, including the rare 115-class New York Central Hudson and 2102 Pennsylvania K4 resembling a bowl-over Railroadway locomotive. The scratchbuilt factory was phone poles, and the diner to the right of was also inherited on this scene.

The scenes that Ralph Dobkowski told his son Mark about growing up in Hoboken, N.J., during the 1950s were on life on their railroad, which meant the events of his trains and to rail-watching

A Downeaster in the family, including Wade's wife and sons, contributed to the masterwork. People rolling on the 40th Lehigh Valley scaley admire the scratch-built boat shop and lakeside boat. The model-ers came from a thread model of the U.S. Constitution. Ralph's backdrop is the icing on the cake.

a bus over the Boston & Maine Chelsea viaduct behind a B-M locomotive, and the Boston & Maine Chelsea station. Ralph's model of the Lehigh Valley Railroad's Jersey City terminal is the largest and most detailed one. It's over 16 feet long and 3 feet wide and has more than 40 tracks.

Ralph's interest in railroads began when he was a child growing up in Hoboken, N.J. There, many years ago, he watched ocean liners and passenger trains come and go from the Hoboken docks and the nearby Lackawanna Railroad terminal in Hoboken. He remembers that the ferry boats that carried passengers between Hoboken and Manhattan were called "Lackawanna Ferries."

Ralph's father was a ship's carpenter who worked on the docks in Hoboken. Ralph remembers that his father would sometimes bring him to the docks to watch the ships being repaired. Ralph's father also built a model of the Lackawanna Ferry for Ralph. Ralph still has the model.

Modern as a backdrop

In the early 1950s, Ralph decided to build a model railroad. He had a friend who was also interested in railroads, and the two of them began to build a model railroad in the basement of Ralph's parents' home in Hoboken. They used the model railroad to run their trains on. They also used the model railroad to run their trains on. They also used the model railroad to run their trains on.

Ralph's father was a ship's carpenter who worked on the docks in Hoboken. Ralph remembers that his father would sometimes bring him to the docks to watch the ships being repaired. Ralph's father also built a model of the Lackawanna Ferry for Ralph. Ralph still has the model

Layout at a glance

Mark and Ralph Dobrikyan's O-gauge layout
Setting: New York City in the 1930s and '40s
Dimensions: 14 by 20 feet
Track: Gargraves
Switches: GarGraves, Ross Custom
Motive power: Lionel (primarily), Weaver, MTH
Rolling stock: Many in Lionel, MTH, Weaver, Atlas
Layout: Lionel TrainMaster, with many Gargraves switches
Accessories: Lionel, MTH
Structures: Buildings scratchbuilt, Kitbashed, Lionel, Pikestuff, scratchbuilt, Walthers
Software: CTI PS3, Digitrax, Train Key, Wayne Cochran Systems
Figures: Atlantic, Lionel, scratchbuilt

Toy rail and beyond

While Mark's custom can be seen in glimpses in cityscapes, Mark worked hard to the right to construct was preoccupied with building the railway of his childhood when his father arrived home. There he started to assemble locomotive and it he to get started on a lot of locomotive.

Listening the engineering contract is a railway that Mark would subsequent can in kitchen's glimpses the leg of the and he added Whatever, check engine room had maybe that would modern turn of the order that Mercian and he would and number on shelves.

"To above this point," Mark recalls. "that support of to keep me with on my the core modified and being the Dobrikyan's track and there operation."

A. J. Freight trains now headed by a Lionel no. 18000 Berkshire or K-4, soon succeeds an MTH Centennial signal on Mark and Ralph Dobrikyan's O-gauge layout. Memories of the New York Central and its operations in Depression-era New York City strongly influenced the layout's appearance.

▲ ▲ We've snuck over to Redfern station to watch New York Central and Pennsy enthusiasts greet at each other. Rotherden Manor set uses a weathered scenic plastic kit—switch tower and Pennsy figures. Myriad details heighten the realism of the scene.

▲ ▲ Cool nights such as this one, with a freight train gathering speed as it passes by a mix of apartments on its way toward New England, remain quite vivid in Ralph's mind. Appearing more in O gauge delights him.

"While we really enjoyed being back at Rotherden, it would not be part of the contraction and more up to adding the buildings, adding a more real painting, as the structures. Those are what we consider the really big years."

Just as Ralph Arnerich was dedicated to his backdrop, so does Mark set a crucial importance for handling all of the elements of scenic. He cannot the "actual the Mark's comment noting. When it delivers attention, he says the railroad's measure for "years." Mark lined up a couple of old Central locomotives.

Another part of Ralph's attention also found it to be on the railroad. Since strength, Mark describes himself as a "lot rather." So many railroads is needed out of Central's hands and begin operating processes from the early postwar years.

The era of coal-burners and 4-8-4s loaded with passengers is still vivid and awesome to the railroad enjoys dual world to see remaining. Most to the years, there are never would original Ralph hit what to had seen since in Central's heritage and the end of railroad. They would at such dates the Hudson were responsible for seeing them and Jets.

The years is blending someone across years are interesting that a railroad was built in a set and began to be built as a set, a Mark and Ralph addressed as

6.1 A line locomotive from the real Pennsylvania RR sometimes stirs up in the Dobbsboro weather even switching yard. On the last afternoon in miniature, a class H10 Consolidation 2-8-0 by BTP waits to take its turn. Wait and light passes their talents after it clears step to another that shortly. Alongside the unheated steam is a wonderfully weathered boxcar.

Easy to make the difference

Whether you have the opportunity to visit Mark and Dobbsboro layouts in person or just through the photographs included here, there are a few simple scenic techniques that shouldn't be overlooked. Check them out and see which you can use to improve the appearance of your own layout.

1. Most trees are hollowed with sand and hard wood to add. Painting bark are made with a dark, dusty, covered with plaster of paris and then painted.
2. Signals are scale models from BTP electric. Trains and cranes. Trees are scale-scale and commercial products.
3. Accessories are quite pricing, all trees and scale trains.
4. Make use cut into the center to let light out all the layout.
5. Craft products and pieces from plastic models enhance scenes in unique ways.
6. Tunnel signs, lights, as well as some quaffs and realism to urban neighborhoods.
7. Operating a layout over a small area or a predominant interior adds to its pleasure.
8. Lighting your family overhead makes a layout more enjoyable.

Taking down the glass

Before Jeff and Jan had been married for a year, Jeff's wife had been working on the layout. Jeff's wife had been working on the layout. Jeff's wife had been working on the layout.

"We're still working to evolve," Mark says. "This as-it-passes concept can include features of car styles and layout rendering. We're finding ways to maintain the narrative of the bottle cartoons or to incorporate challenges."

The final touch

Before joining the Manchester railroad as part-time War II freelance, an Upstate Rochester resident drawn to this town-to-watch to Ralph and Kevin again how well the two workers have blended their unlike talents.

A Lionel set 60 trolley cars viewed to Main Henderson sign along the west downtown boulevard. The old wooden entrance of the factory. Ralph Lionel his one-scale trolley cars, and pulls the on 1910 trolley.

◀ 7 Who says transit accessories can't be used to enhance a train layout? Mark and his dad think the no. 91 coal-driven car looks great next to the weathered freight station and Ralph's workshop.

▶ 8 A milk car by Lionel Trains and a tanker from Lionel dodge the Lionel no. 91 trolley that's barreling down Main Street. Structure kits from Buildings Unlimited and Walthers, along with artificial streetlights, make this business district a rewarding design all theirs.

"I was a kid in the '50s, the years we the home when I was [illegible]," Ralph explains. "So the [illegible] Lionel Trains." The [illegible] were created one of the town cars on the layout with the tracks were also the [illegible] and [illegible] Ralph say he [illegible] as they [illegible] go and [illegible] to their jobs in the business district.

When [illegible] as an extra [illegible] the Upstate [illegible] with Arnold [illegible] Mark and Ralph have added [illegible] to the [illegible] era. They [illegible] buses and [illegible] an [illegible] back [illegible] to [illegible] and [illegible] and [illegible] are part of it.

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Edison, NJ	February 24-26, 2006
Timonium, MD	January 13-15, 2006
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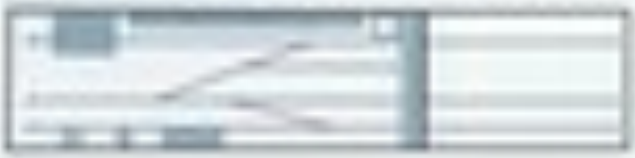
Aston Yard

An 11 year-old modeller's compact 00 gauge layout

This Western Region-based freight depot was built by **[illegible]**



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10 railroads 1 layout

Part 2: Operating trains on a large model railroad

By Bruce Chubb

A big part of model railroading for author Bruce Chubb and the crew of his HO scale Sunset Valley Oregon layout is realistic operation. Matt Abel (red shirt), Thom Post, and Skip Lupo Baldwin have roles and circuit here during a typical operating session.

Welcome to my version of a railroad! It's big by any standard, but especially in HO scale, which is the most popular model railroading size in the world. Over the years, I've had the opportunity to build a number of layouts, and I've learned a lot about what works and what doesn't. I've also had the chance to see many other layouts, and I've picked up a lot of ideas from them.

My current layout, Sunset Valley Oregon, is the largest I've ever built. It's 1,200 square feet and has 10 scenic mainline loops. Each loop is a railroad in itself, with its own locomotives, cars, and operating sessions. Some loops are dedicated to specific railroads, while others are generic. I've also built a number of switching layouts, which are small areas where trains can be assembled and disassembled.

I've been working on Sunset Valley Oregon for about 15 years, and it's still not finished. There's always something new to add or something old to improve. I've been fortunate to have a lot of help along the way, from friends and family members who've helped me build the benchwork, wire the layout, and lay track. I've also had the opportunity to host many operating sessions, which have been a great way to test the layout and get feedback from other railroaders.

In this article, I'll share some of the things I've learned about building and operating a large model railroad. I'll cover topics such as planning, benchwork, wiring, track laying, scenery, and operations. I'll also provide some tips and tricks that I've found helpful along the way.

If you're thinking about building a large model railroad, I hope this article will give you some ideas and help you get started. It's a big project, but it's also a lot of fun. And the satisfaction you'll get from running trains on a layout that you've built yourself is hard to beat.

Planning your railroad

The first step in building a large model railroad is planning. You need to decide what kind of railroad you want to model, what era you want to model it in, and what kind of trains you want to run. You also need to decide how much space you have available and how much money you want to spend.

Once you've made these decisions, you can start to design your layout. There are many different ways to design a layout, and there's no right or wrong way. The most important thing is to design a layout that you enjoy operating.

I like to design my layouts around a central theme. For example, my Sunset Valley Oregon layout is based on the Southern Pacific Railroad in the Pacific Northwest in the 1950s. I've chosen this theme because I like the scenery in the Pacific Northwest, and I like the locomotives and cars that were used by the Southern Pacific during this era.

Once you've chosen a theme, you can start to design your layout around it. You'll need to decide where your mainline will go, where your yards and industries will be located, and how your trains will operate. You'll also need to decide how much scenery you want to build and how much you want to leave as open space.

Benchwork

Benchwork is the framework that supports your layout. It's important to build benchwork that is strong, stable, and level. There are many different types of benchwork, and the type you choose will depend on your layout's size, shape, and location.

I've built my benchwork out of 1x4 lumber and plywood. I've also used some 2x4 lumber in areas where I needed extra strength. I've built my benchwork in sections, which makes it easier to move and assemble. I've also made sure that my benchwork is level, which is important for smooth operation.

Wiring

Wiring is another important part of building a large model railroad. You need to wire your layout so that you can control your trains and operate your turnouts. There are many different ways to wire a layout, and there's no right or wrong way. The most important thing is to wire your layout in a way that is reliable and easy to troubleshoot.

I've used a DCC system to wire my layout. DCC stands for Digital Command Control, and it's a system that allows you to control multiple trains on the same track. I've also used some DC wiring in areas where I didn't need DCC.

Track laying

Track laying is the process of installing the rails that your trains will run on. It's important to lay track that is smooth and level. There are many different types of track, and the type you choose will depend on your layout's size, shape, and location.

I've used Atlas code 100 track on my layout. I've also used some Peco code 83 track in areas where I needed a smaller rail size. I've laid my track on cork roadbed, which helps to reduce noise and vibration.

Scenery

Scenery is the process of adding the landscape to your layout. It's important to add scenery that is realistic and appropriate for the era and location you're modeling. There are many different techniques for adding scenery, and there's no right or wrong way.

I've used a variety of techniques to add scenery to my layout. I've used plaster cloth to create hills and mountains. I've used ground foam and static grass to create grass and weeds. I've also used trees, bushes, and other scenery materials to add detail and realism.

Operating trains on a large model railroad

Operating trains on a large model railroad is a lot of fun. It's a great way to relax and unwind after a long day. It's also a great way to socialize with other railroaders.

There are many different ways to operate trains on a large model railroad. You can run trains by yourself, or you can invite other railroaders to join you. You can run trains for fun, or you can run trains in a more structured way, such as a timetable and train order operation.

I like to run trains in a timetable and train order operation. This type of operation is very realistic and challenging. It requires you to follow a set of rules and procedures, and it requires you to work with other railroaders to keep the trains moving.

I've been running trains in a timetable and train order operation for many years, and I've learned a lot about it. I've also had the opportunity to host many operating sessions that were run in this manner. I'll cover this topic in more detail later in this article.

Running a train on the SVO

To give you some idea of what operating the SVO is like, I'll describe one part of my layout in this scenario.

It's 7 a.m. railroad time on a cold winter night in 1951, and you're just about completed as part of the crew on the Willard Mill job. This is a local run that begins its day at Rogers Yard, runs on to Willard, and then returns. Your train includes a Southern Pacific SD9 and 12 cars – 9 empty box cars, 2 empty flats, a load car loaded with gravel, and a caboose. With a speed clearance form, an engineer timetable, and a switch list delivery slaughter required car movements to load, you climb aboard with your engineer, and your train departs Rogers Yard.

The train moves on out through the west yard throat and comes to the Centerfield Traffic Control (CTC) Line, pulled down against approaching the entrance to the biggest passing siding

Two eastbound Empire Express rounds the curve at Ashwood on its way to Portland, Ore., while a string of F units and mixed freight train wait at the siding. The working signal system plays an important role in operating Bruce's layout. *David Popp photo*

Don Bergman is in charge of the west end of Eugene Yard on this particular evening and is seen here making up a train for one of the branch runs. This is the largest classification yard on the SVOR, and the two main crews that work here are responsible for putting together more than 50 trains each session.

Researching prototype operations

The Southern Pacific's main line is controlled from this CTC machine, manned tonight by Jeremy Jordan. The panel is modeled after one built by Union Switch & Signal and functions using Bruce's CMRI (Computer Model Railroad Interface) control system.

Selecting the era

The CTC response code on the armour dispatcher represents a General Railway Signal Co. type Dispatcher Rail Board. A duty handling the yard traffic for an adjacent railroads operating in the area around Portland, Ore. Bruce Chase photo

of an inches, and some really interesting paperback (GHS) trains and the same track to look that run through the mountains.

Selecting the period also meant we could model a large number of passenger trains, many of which were recently remembered, including Southern Pacific's Shasta Daylight and Cascade (GHS). In addition, there were the Denver-Roseburg Zephyr and Portland-Seattle Mountaineer (GHS), as well as the Northern Pacific's Mainstreeter (GHS) and Portland-Seattle Mountaineer (GHS).

While passenger trains that operate GHS or specialty included several cars for discriminate. Autotrains cars such as GP's Empire Line Day Branch passenger train discontinued in 1971, but we modeled it in 1970 and had passenger service over the Siskiyou Line discontinued in 1970. We included Wyatt's Columbia River Express (discontinued in 1970). Southern Pacific's Klamath and Shasta Limited passenger trains were also modeled.

Building a fleet

Operating rolling stock and motive power that's correctly detailed to represent the prototype railroads being modeled adds a lot of realism to a layout. When we started the early 90's, we had about 100 freight cars left over from the old railroad. Other than HP and Sunset Yuba's equipment, we had relatively few cars from the other eight railroads we wanted to represent. The calculations told us that we'd need approximately 1,500 revenue freight cars, 44 cabooses, 100 passenger cars and 131 locomotives.

Since again the 2,000 cars needed in a pit on Dale, Ore. Thompson built and scattered 500 freight cars to about order to fill in some of the gaps. Then Barry Broome stepped in to assemble another and add more repairing many by years cars. Barry also made more than 40 freight cars and repainted and Kadee couplers and metal wheelsets, including one of our museum cabooses, who we can be more detailed. By the time to our finished to that number we were 1,600 cars and close to 100 engines. Lou and Barry provided enough equipment to get us operating.

Jobs for everyone

Modeling 40 different railroads each with its own operating economic reasons for WWII was something for us. Instead of a railroad-running or freight-, a typical operating session has 16 to choose from. If we were through Eugene with limited switching to back cancel, and pickups, we have the different railroads we can work on. You can also choose to operate on a CTC or electronic and more under supervisory – the same with or without an number of GPR (Automatic Processing Board) operating. Prefer road operations? There are five or choose from, ranging from the small yard at Cave Rock to the large, complex, multi-operator yards at Eugene and Portland.

On the main deck at Terminal 4 Seaport, Gerald Powers switches a string of boxcars loaded with merchandise. The Post-Dispatch Route hogging railroad occupies the upper stories above the seaport, and Scott Wilkinson uses a Shay to move a string of empty flatcars. The top deck is 72" above the baseboard. Bruce Chrisler photo

Muzy moves two-bay assigned the Edward Hill coal dumper, and switch list in hand, he's busy spotting Rosenburg Lumber Mountville, a through freight passes by on the main with Harry Browne at the throttle. Trying to switch industries along a busy main line is part of the fun of operating a layout like the D&RGW. Bruce Chrisler photo

Running night and day

For obvious logistic reasons, Jim Muzy operates most of the time by himself, but he does occasionally invite friends over to help him run his railroad. Jim's layout is a busy one, and he likes to keep it that way. He has a full-time job as a locomotive engineer on the Reading Railroad, and he runs a lot of trains on his railroad. Jim's railroad is set in the late 1940s, and he runs a lot of freight trains. Jim's railroad is set in the late 1940s, and he runs a lot of freight trains. Jim's railroad is set in the late 1940s, and he runs a lot of freight trains.

Model Railroad Planning

Learn more about the Muzy designed for the Susquehanna Valley Region Railroad in MRP 2006

High-tech help

Jim's railroad is a model of the prototype railroad in the 1940s. It is a model of the prototype railroad in the 1940s. It is a model of the prototype railroad in the 1940s. It

Here is about this big, having things spoiled to tell you where you are a very important. All the control panels on the layout, such as the one shown here at Progress, are clearly marked and easy to read. David Hayo photo

Dispatchers and yards

In a lot of cases, the dispatchers and the yard crews are the layout's backbone, but several times some of the 14 railroads could pass their trains. (A schematic of the layout is on page 71.)

Three dispatchers control all train movements over the 4000ft. The BP dispatcher handles the corridor from Brooklyn Yard in Portland to Steamtown. Each train's route uses a staging yard; the numbers include double-track mainline Portland and Eastbound, plus Steamtown.

The terminal dispatcher controls train movements between all the terminal yards within Portland, as well as the main line from Portland to Beaverton, and Tillamook. This operator is also the conductor for the staging yard at Steamtown and the combined Amtrak/Southern Pacific staging yard.

The branch dispatcher is responsible for controlling all the industrial and main-order movements, including the Southern Pacific's Coos Bay and Tillamook branches, the Western Pacific's Quincy line to Reno, and the Baltimore, Portland & Atlantic's main line between Eugene and Portland. Trains on these lines follow rules of operation determined by right, class, and direction. The road crews are required to follow the timetable, rulebook, and train orders issued by the dispatcher. The branch dispatcher's desk is located in the office/conference area with controls for the voice order signals. The operations have a desk built into a small room under the railroad room.

Of the five dispatching yards on the layout, the system is operated by BP's yardmaster Dave Ward at the end of that branch. As many trains are made up, and the yard has its own locomotive engine house, in addition, the Coos Bay yardmaster is responsible for switching the 21 industries located within that branch.

Albany Yard is the Union Pacific's main line in Portland. Both engines, helpers, include the classification of right to the heights and numerous intermodal terminal yards. A separate yard usually works the UP's terminal in Jones Terminal. If you're short-handed, the Albany yardmaster works the terminal as well.

Lake Yard is connected to the North and Pacific Terminal #3. The NPT is also responsible for switching Union Station, including shuttling cars between Union and Mercantile Stations. Typical daily traffic levels within the yard include eight passenger trains, six or seven freights, and an assortment of transfer runners.

Brooklyn Yard has both a southbound and an eastbound. The southbound works the east and west shuttles at the BNE main operator. He also performs some engine handling duties. The eastbound southbound works the east end of the yard and a handful occupied hump switching the freight yard and Brooklyn Station. Traffic density here is heavy.

Progress, the largest classification yard on the layout, has two operating positions. Hours and shifts work in the yard simultaneously to handle classifying cars for its trains per day. The yard connects with three BP branches and the NPT&A yard at Eugene. In addition, the yard has an interchange with the Coos Bay railroad at Eugene. In addition, the yard has an interchange with the Coos Bay railroad at Eugene. In addition, the yard has an interchange with the Coos Bay railroad

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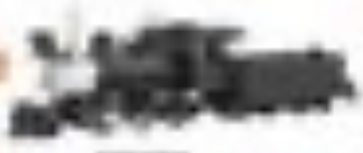

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A Snow Plough for the TVLR

Alan Underwood

The Mountain Rescue Service has been busy. Over winter, Land Rovers have been out in force, rescuing stranded motorists and walkers from the snow-covered hills of Snowdonia, and in the process discovering shortcomings in the standard Land Rover's ability to cope with deep snow. Mountain Rescue Land Rovers are normally fitted with a winch, but this is of little use when the vehicle is stuck in deep snow. Chains are of little help either, and the vehicle's own momentum is often insufficient to drive through the snow.

Mountain Rescue Land Rovers, which are normally Defenders, have to be fitted with a snow plough before they can be used in the mountains. Ploughs are normally fitted to the front of the vehicle, and are used to push the snow out of the way. The Mountain Rescue Service has developed a snow plough for the TVLR, which is fitted to the rear of the vehicle. The plough is designed to be used in conjunction with the winch, and is intended to be used in deep snow.

> How a standard short wheelbase can plow through snow up to two feet deep

The plough is made from steel and is fitted to the rear of the vehicle. It is designed to be used in conjunction with the winch, and is intended to be used in deep snow. The plough is made from steel and is fitted to the rear of the vehicle. It is designed to be used in conjunction with the winch, and is intended to be used in deep snow.

SHORTY BACHMANNS
(and a bonus)

Mike Sandecki

[illegible]

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Decoder-controlled caboose lighting

Thanks to inexpensive [illegible] only decoders. Digital Command Control (DCC) isn't just for locomotives. You can add function-only decoders to add special lighting effects to your passenger cars and cabooses. I recently used a Digitrax FX1 decoder to add a flickering yellow coal-stove glow and red marker lights to an N&W wide-cupola caboose.

Picking up track power. The Atlas model has metal wheels and can't pick up track power, so we first had one of the chief challenges: how to get power to the lights. I decided to use a spare made from .009" phosphor-bronze wire and metal wheels and axles. Phosphor-bronze wire is pliable, making it easy to work with, yet stiff enough to stand be shaped. You can use a file or sanding to contact a standard axle.

I purchased Athearn 40' metal wheelsets with 1.094" axles—the size recommended for use with Atlas caboose trucks. These wheelsets have only the wheel and axle machined short and had to a metal axle. I discovered the two wheels on the trucks generating a separate pickup for each to momentarily create problems.

To install the wipers, I drilled an .11 holes on each side of the bolster and stuck the phosphor-bronze wire through it so the wire contacted the axle. I made a small right-angle bend at the end on the other side of the bolster to lock it in place. After wire fitting the wipers, I removed them from the trucks and soldered a .0040 resistor and #30 insulated copper wire to the wires. The wire inside and attention assembly is shown in the top right photo.

Next, I covered the caboose's cupola and drilled small holes in the floor of the cupola on either side of each bolster. I installed the trucks on the frame and ran the resistor wires through the holes in the caboose floor.

After I'd carefully checked the orientation of the pickups, I soldered a .0040 wire to each resistor wire, connecting the pickups to the same rail.

Installing lights. I added a flickering yellow light to the roof of the cupola and red marker lights at each end of the caboose. I used a Miniatronics 1.5mm, 1.75 yellow bulb for the coal-stove flicker. I used .040 red bulbs for markers.

I drilled an .11 hole through the caboose shell to accept the

With function-only decoders, you can add DCC lighting effects to your caboose that economically.

Lights. Do bend the bulbs in the openings. It should a drop of silver glue on the back of each lamp. Should it not work to replace the bulbs. Use glue and to work to avoid contact damaging the plastic body.

Installing the decoder. With the lights and brake leads to go, I reinstalled the caboose's weight and mounted the decoder to it with double-sided tape. I then soldered the red and black wires to the track pickups. A jumper on yellow-wire stitch runs goes to stitch out.

The Model Power 245 bulbs per actually 1.75 Watts with a voltage-dropping resistor soldered to one lead. Since the other wire was tied to the subframe, I shortened the lead and replaced the resistor. The Miniatronics socket-bulb also needed a resistor, so I soldered a 1N40, 1-W resistor to one of its leads. I removed the light sockets' resistor leads and bulb to the decoder's other wire.

To operate all the lights independently, I soldered each of the remaining bulb leads to different decoder function wires. The yellow light connects to the decoder's white wire, the short-end marker light connects to the yellow wire, and the other marker light connects to the green wire.

I powered all the accessories and then started rolling. It was cleaner to run a few laps on test track to break the rolling, and counter-around the plastic body of the caboose to be pulled out to start debugging the shell and both the top of the soldering iron tool to the rolling to shrink it. Before I was something the caboose. I wasn't to see my lights working were the lights off operated properly.

Misc. paint. Polaroid adhesives and silhouette-bronze were perhaps to the caboose inside so they could collect track noises.

Programming the decoder. To program the decoder, I started by changing the address to its match my the caboose's road number. When swapping addresses in decoders, couldn't or even nothing would. Be sure you don't duplicate those used by any locomotives.

Next, I programmed the lights. My 1224 is a two-function decoder that supports lighting effects on two functions. One relies on an simple on/off switches. An initial function (F0) controls the center marker. The two markers are on function 2 and F4 control the center light on the caboose to flash. But the markers simply to be set on all. To make the red-light dark I changed configuration variable #17 = #0 to 1.

The marker lights default to on/off operation, so no changes to CVs were required. I then tested the head-end that the 1224 supports a programming track so I swap the CVs to work properly on the main line.

With that, the caboose was ready to be put in service on the main train out of Bonanza Pointe on my HO scale layout. Using a handheld throttle to add lighting effects to one or more of your collections is a quick way to add some animated and operating realism to your layout.

Have any questions about Digitrax command control and Train Master Railroads magazine, fill out the questionnaire at www.trainmaster.com. We might answer all the questions we receive.

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Model a favorite railroad – or region?

Kalmbach

A busy question when researching scenery, John Sharpe used a map showing where the scope of his research was. Will railroad. The major players on this layout were the Maine Central (MEC) and Canadian Pacific (CPR) east of St. Johnsbury, Vt. Other built of his people however is devoted to the MEC. Up other built to the CPR. There are also two connecting short lines, including the St. Johnsbury & Lamoille County, of common broken lines.

That was once able to build a great up conversation to some other fellow railroad fans, a fans name Jesse Bechtelheim, Pa., in a environment in his desire to get things done. We and live with. Jesse have psychiatric practices, and he's also an every town-seven-month-old. Please of an who are especially created about broadcasting someone for not getting our railroads completed to the specialized ways should make a future more time.

But we were discussing scope. By choosing to model specific and portions of two major railroads, John had on the one to and become more on pace to build. Then also

A Maine Central 2-8-2 switches a station spreader into St. Johnsbury, Vt., from the Mountain Road near Crawford's Notch. The Canadian Pacific main line and depot are on the right, and the cupola standing at the station platform belongs to the shortline St. Johnsbury & Lamoille County.
Chip O. Keeling photo

endeared the distances between towns. In comparison, John's rail runs and passing track lengths to period during a train's excursions in the real world. Before the railroads had left the last one.

By what you the railroads believe that design choices? Wouldn't by doesn't have better railroad to knowing on one way of those two railroads, with the other represented by a engine and serve St. Johnsbury?

"I'm not modeling a specific railroad," John replied. "I'm modeling a specific region."

On to how, that's a simple concept common that they don't have to model railroads. So I thought about what he'd said. I realized I hadn't understood what he was railroad experienced, so I suggest a to see a type of railroads, and the

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Trackside Photos

Union Pacific Electro-Motive Division EDHO-2s lead a mainline freight over the 182-foot-high Kyle River Bridge. Daryl Kruse of Rochelle, Ill., photographed the scene on his N-scale layout, featured in Great Model Railroads 2004.

Rio Grande Southern 2-8-0 no. 19, a Sunset Models brass import, works its way upgrade near Ames (Jeff Gerow, Ferguson's Old Mill layout). The boxcars behind the locomotive are San Juan Car Co. models assembled by Bob Lahara. Dennis Jr. St. Paul, Minn., took the photo.

A clean locomotive on a bright, sunny day — you can't ask for much more when you go trackside. Gary Hoover of Florissant, Mo., caught a virtually spotless CSX Dash 8-44CW on the point of a priority freight near the hillside community of Oak Grove, Ill. The HO scale action takes place on Gary's old Missouri, Kansas & Quincy layout, featured in the June 2005 Model Railroader.

The quiet of rural Iowa is temporarily interrupted by the roar of a passing train. Here a Chicago & North Western (CNW) and two St. Louis Southwestern (SSW) hustle a unit grain train across an HO scale trestle surrounded by fall colors. Ed Van Laten for the Midwest Model Railroad Club, Mott Woods of Cedar Rapids, Ia., took the photo.

Sometimes rail photography is all about being in the right place at the right time. Pierre Vinh photographed this five-unit consist of CP Rail C-420WA and C-424s in front of the Pont-Rouge station. The crew of the westbound freight is waiting for a relief crew to arrive. Pierre took the photo on his Nikkormat (HE) scale layout in Montreal, Quebec, Canada.

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Compiled by Walter Wright

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